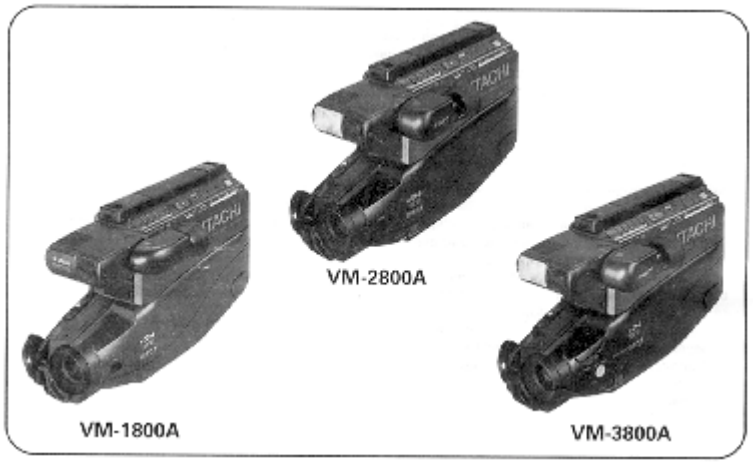
HITACHI

Instruction Manual

VHS

VM-1800A / VM-2800A / VM-3800A



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Thank you for choosing the VHS video camcorder. For maximum pleasure and convenience please read these simple instructions before operating your camcorder.

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CAUTIONS

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION: TO REDUCE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK).
NO USER - SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

CAUTIONS

CAUTION:
TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

"This digital apparatus does not exceed the Class B limits for radio emissions from digital apparatus as set out in the interference-causing equipment standard entitled " Digital Apparatus", ICES-003 of the Department of Communications."

Warning: This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct by one or more of the following measures:
--Reorient or relocate the receiving antenna.
--Increase the separation between the equipment and the receiver.
--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
--Consult the dealer or an experienced radio/TV technician for help.
Caution to the user: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Caution: Avoid operating your camcorder immediately after moving it from a cold area to a warm humid area. Give the camcorder 2 to 3 hours to acclimate to the surroundings before inserting a video cassette. When moved from a cold area to a warm humid area, moisture may condense on the head drum inside the machine. This moisture could cause the tape to stick to the headwheel and damage the headwheel or tape.

See the bottom of the AC adaptor/charger. The rating and caution label is located on the bottom of the AC adaptor/charger.

WARNING: Many television programs and films are copyrighted. In certain circumstances, copyright law may apply to private in-home videotaping of copyrighted materials.

PRECAUTIONS

Any problems that occur as a result of any of the following conditions will not be covered by our warranty.

Be careful that no water, dust, or sand enters the camcorder.
When you are not using the camcorder, switch off the power and attach the lens cap.
When you shoot at a scene which contains an extremely bright object such as the the sun or a light source, a bright vertical bar may appear in the picture.
Your camcorder is functioning properly, but the solid-state pickup device (CCD) usually causes this as an inherent characteristic. Try to avoid shooting an excessive bright object directly.

Be sure not to leave the camcorder in a place where the temperature exceeds 140 deg. F (60 deg. C), or the pickup device may be damaged.
Dangerous includes:
Do not point the electronic viewfinder to direct sunlight; it could damage the viewfinder.
The liquid crystal display (LCD) panel is made by highly precise technology. More than 99.99% of its picture elements (pixels) are effective, but some (less than 0.01%) may not appear as coloured bright dots. This does not indicate a fault as the LCD panel stretches the limits of current technology. (for VM-2800A/VM-3800A)

FEATURES

Digital zoom up to X24
Digital zoom up to X100 (only for VM-3800A)
Solid-state camera pickup
HQ High Quality picture technology
Auto focus power zoom lens with macro feature
Full record and playback capability with standard VHS cassette
Program AE (Auto Exposure)
Fade in / fade out
Color electronic viewfinder (EVF) (for VM-2800A/ VM-3800A)
Flying erase head
Time and date
Titler
Index signal
Audio / video dub
Audio dub
Built-in camera light (for VM-2800A/VM-3800A)

Differences between Models VM-1800A/2800A/3800A)

	VM-1800A	VM-2800A	VM-3800A
Viewfinder Type	Black-and-White	Color	Color
Built-in Camera Light	No	Yes	Yes
Focus	Auto	Auto	Auto/Manual
Instant Zoom	No	No	Yes
16X9 Mode	No	No	Yes
Remote Control	No	No	Yes

This instruction manual shows the illustrations for the VM-3800A.

* **This video camcorder with this marking incorporates high-quality picture technology and is compatible with any video cassette recorder bearing the mark.**

ACCESSORIES

Check to make sure you have the following components and accessories (besides the camcorder unit itself) before disposing of the packing material.

1. Lead-acid rechargeable battery
VM-BP66 for VM-1800A/VM-2800A
VM-BP67 for VM-3800A
2. AC adaptor/charger
3. Shoulder strap
4. DC cord
5. Audio/video cable (only for VM-3800A)
6. Remote control (only for VM-3800A)
7. Remote control battery (only for VM-3800A)

IMPORTANT SAFEGUARDS

In addition to the careful attention devoted to quality standards in the manufacture of

your video product, safety is a major factor in the design of every instrument. But, safety is your responsibility too.

This page lists important information that will help to assure your enjoyment and proper use of a Video Camcorder and accessory equipment. Please read it carefully before operating your video product and keep it in a handy place for future reference.

INSTALLATION

1 Read and Follow Instructions -- All the safety and operating instructions should be read before the video product is operated. Follow all operating and use instructions.

2 Retain Instruction -- The safety and operating instructions should be retained for future reference.

3 Heed Warnings -- Comply with all warnings on the video product and in the operating instructions.

4 Polarized Plug -- This video product is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. To prevent electric shock do not use this polarized plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted without blade exposure. If you need an extension, use a polarized cord.

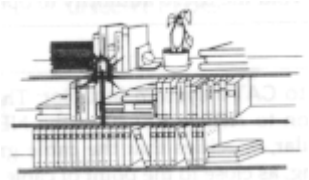
5 Power Sources -- This video product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your video dealer or local power company. For video products intended to operate from battery power, or other sources, refer to the operating instructions.

6 Overloading -- Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock. Overloaded AC outlets and extension cords are dangerous, and so are frayed power cords, damaged or cracked wire insulation and broken plugs. They may result in shock or fire hazard. Periodically examine the cord and have it replaced by your service technician if appearance indicates damage or deteriorated insulation.

7 Power Cord Protection -- Power supply cords should be routed so that they are not

likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

8 Ventilation -- Slots and openings in the cabinet are provided for ventilation to ensure reliable operation of the video product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the video product on a bed, sofa, rug or other similar surface. This video product should never be placed near or over a radiator or heat register. This video product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the video product manufacturer's instructions have been followed.



9 Attachments -- Do not use attachments unless recommended by the video product manufacturer as they may cause hazards.

Caution: Maintain electrical safety. Power-line operated equipment or accessories connected to this unit should bear the UL listing mark or CSA certification mark on the accessory itself and should not have been modified so as to defeat the safety features. This will help avoid any potential hazard from electric shock or fire. If in doubt, contact qualified service personnel.

10 Water and Moisture -- Do not use this video product near water -- for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.

11 Accessories -- Do not place this video product on an unstable card, stand, tripod, bracket or table. The video product may fall, causing serious injury to a child or adult, and serious damage to the appliance. Use only with a cart, stand, tripod, bracket or table recommended by the manufacturer, or sold with the video product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

11A An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

12 Outdoor Antenna Grounding -- If an outside antenna or cable system is connected to the video product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-

in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See example below:

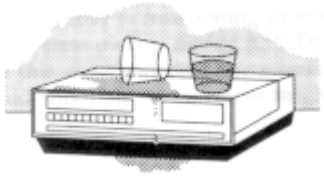
EXAMPLE OF ANTENNA GROUNDING

13 Power Lines -- An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching or approaching such power lines or circuits as contact with them might be fatal. Installing an outdoor antenna can be hazardous and should be left to a professional antenna installer.

USE

14 Cleaning -- Unplug this video product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

15 Object and Liquid Entry -- Never push objects of any kind into this video product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the video product.



16 Lightning -- For added protection for this video product during a lightning storm, or when it its left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable-system. This will prevent damage to the video product due to lightning and power-line surges.

SERVICE

17 Servicing -- Do not attempt to service this video product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
18 Conditions Requiring Service -- Unplug this video product from the wall outlet and refer servicing to qualified service personnel under the following conditions.
a. When the power-supply cord or plug is damaged
b. If liquid has been spilled or objects have fallen into the video product.
c. If the video product has been exposed to rain or water.
d. If the video product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video product to its normal operation.
e. If the video product has been dropped or the cabinet has been damaged.
f. When the video product exhibits a distinct change in performance -- this indicates a need for service.
19 Replacement Parts -- When replacement parts are required, have the service technician verify that the replacements he uses have the same safety characteristics as the original parts. Use of replacements specified by the video product manufacturer can prevent fire, electric shock or other hazards
20 Safety Check -- Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks recommended by the manufacturer to determine that the video product is in safe operating condition.
21 Heat -- The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

IMPORTANT SAFETY INSTRUCTIONS FOR AC ADAPTER/CHARGER

1. **Save these instructions**--This page contains important instructions for AC Adaptor/Charger Model VM-AC69A (T).
2. Before using AC Adaptor/Charger, read all instructions and cautionary markings on (1) AC Adaptor/Charger, (2) battery and (3) product using battery.
3. Also read all instructions on pages 4 and 5.

4. **Caution**--To reduce the risk of injury, charge only rechargeable battery, VM-BP64/BP65/BP66/BP67. Other types of batteries may burst causing personal injury and damage.

5. Do not expose charger to rain or snow.
6. Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
7. To reduce the risk of damage to electric plug and cord, pull by plug rather than cord

when disconnecting charger.
8. Make sure cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
9. Do not operate charger with damaged cord or plug--replace them immediately.
10. An extension cord should not be used unless absolutely necessary.
Use of improper extension cord could result in a risk of fire and electric shock. If extension cord must be used, make sure:
A. That the pins on plug of extension cord are the same number, size, and shape as those of plug on charger.
B. That extension cord is properly wired and in good electrical condition; and
C. That wire size should be met below:

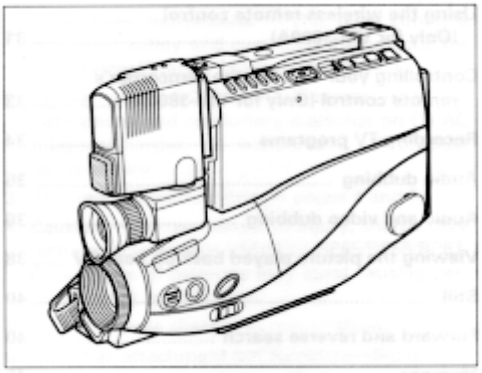
Minimum AWG size	Length of extension cord (feet)
18	Equal to or less than 100
16	Equal to or less than 150

11. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.
12. Do not disassemble charger; take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.
13. To reduce the risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning.

"Note to CATV system installer: This reminder is provided to call the CATV system installer's
attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building,
as close to the point of cable entry as practical".

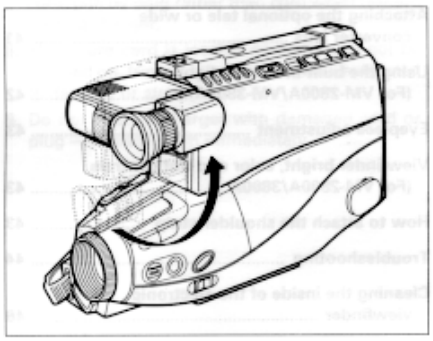
ELECTRONIC VIEWFINDER

Set the viewfinder to the position shown in the figure when carrying the camcorder or storing it in the carrying case.

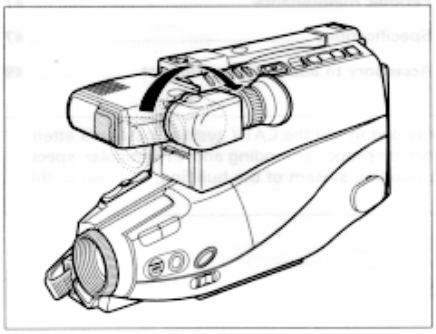


Turn the viewfinder to the position shown below when shooting pictures.

1. Turn the viewfinder



2. Turn the eyepiece.

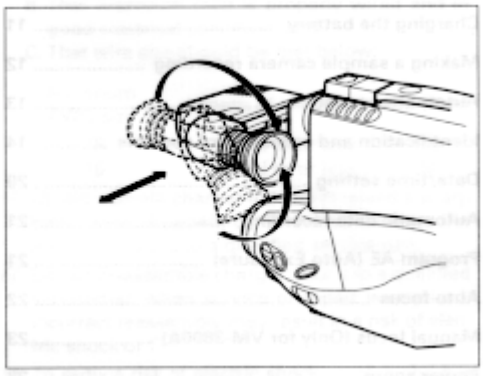


You can adjust the position and angle of the viewfinder so you can see through it easily.

Cautions:

Do not force the viewfinder to rotate completely around. This will damage the viewfinder and/or camcorder.

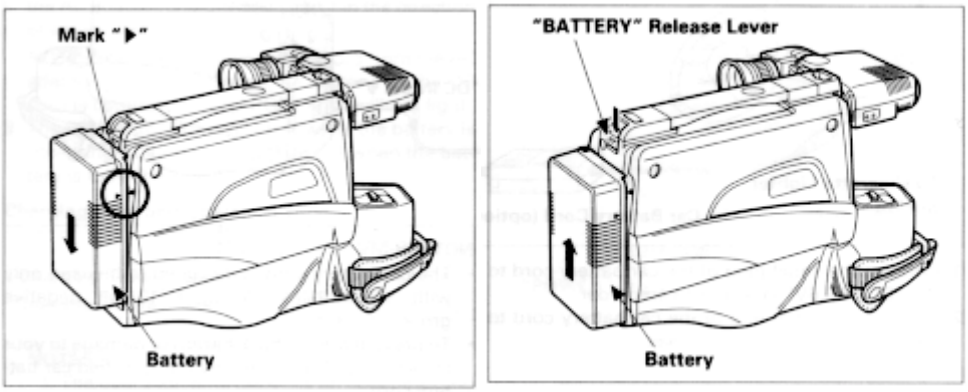
When pulling the viewfinder out or returning it to its original position, hold the viewfinder by the swivel selection. Do not hold the diopter control side.



POWER SOURCES

WHEN USING WITH THE BATTERY (Provided)

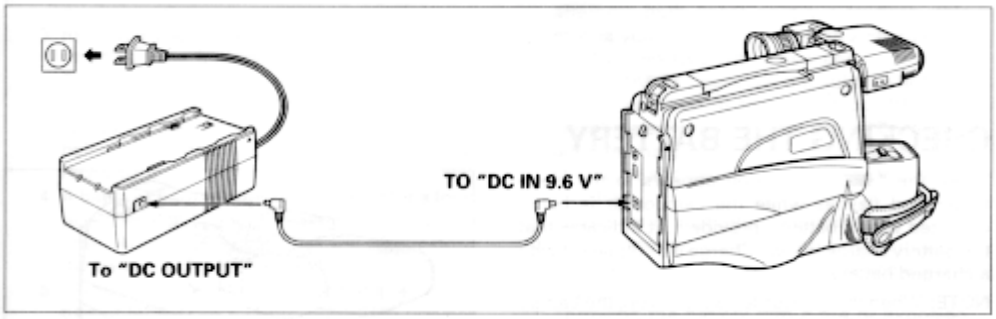
To attach, align the mark "▶" of the battery with that of the camcorder so that the battery fits into the groves, and slide the battery downward, as illustrated.



To remove the battery:
Push and hold **"Battery"** release lever, then slide the battery to the upside and remove.

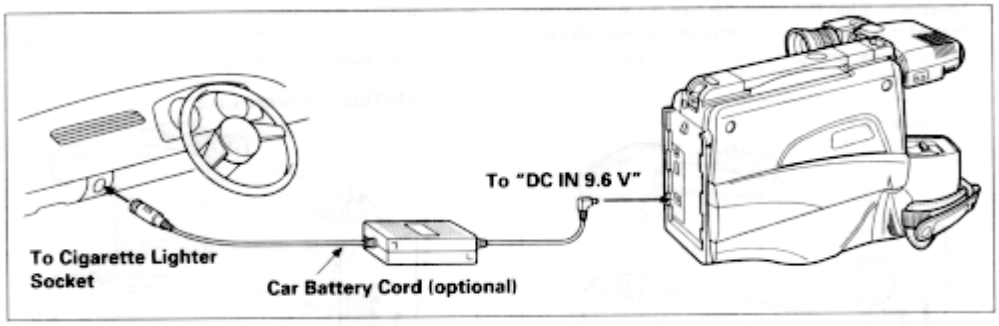
WHEN USING WITH THE AC ADAPTER/CHARGER (Provided)

1. Plug the AC adaptor/charger power cord into AC electrical outlet.
2. Connect one end of the DC cord (provided) to the **"DC IN 9.6V"** of the AC adaptor/charger.
Connect the other end of the DC cord to the **"DC OUTPUT"** of the AC adaptor/charger.



NOTES:
The AC adaptor/charger cannot charge the battery and operate the camcorder at the same time.
When using the AC adaptor/charger to power the camcorder, the batter level indicator may display
"". This indicator is used for battery operation and has no meaning when using the AC adaptor/charger to power the camcorder.

WHEN USING WITH THE CAR BATTERY (By using optional car battery cord Hitachi VM-CC70A)

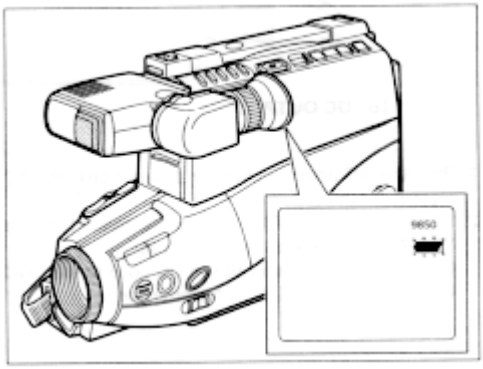


1. Connect the small plug of the car battery cord to the **"DC IN 9.6V"** jack of the camcorder.
2. Connect the other end of the car battery cord to the car's cigarette lighter socket.

NOTES:
The car battery cord is designed to be used only with automobiles having a 12-volt negative ground system.
To prevent fire or shock hazard or damage to your camcorder, please use only the specified car battery cord.

CHECKING THE BATTERY

When the "▬" indication appears in the viewfinder and flashes while the camcorder is being operated with a battery (provided), it indicates that the battery charge is low. Charge it or replace it with a charged battery.



NOTE: When the camcorder is turned on, the battery level indicator "▭" is displayed in the viewfinder indicating the condition of camera/recording battery. When the battery is fully charged, "▭" is displayed.

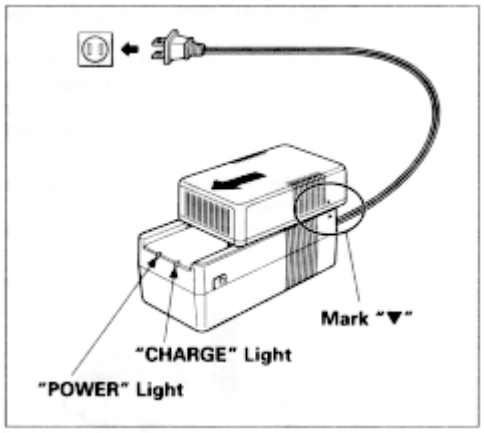
After several minutes, the symbol will change to "▬". When the battery is very near empty, the symbol will change to "▬" and start blinking. You should find an alternative power source or recharge the battery before continuing to use your camcorder.

CHARGING A BATTERY

[2]**1.** Plug the AC adaptor/charger power cord into AC electrical outlet.
2. Attach the battery to the AC adaptor/charger. Align the mark "▼" on the battery with that of AC adaptor/charger and push the battery flush with the AC adaptor/charger and slide it in the direction of arrow.

NOTE: You must remove the DC cord from the AC adaptor/charger to charge the battery. If the DC cord is connected, **"CHARGE"** light will not light.

3. The **"CHARGE"** light will be lit while the battery is accepting a charge, and will go out when the battery is fully charged.



Charging Time and Operation Time

	VM-BP66	VM-BP67
Charging Time	about 2 hours	about 3 hours
Operation Time	about 1 hour	about 2 hours

NOTES:
1. The operation time depends on how often you use zoom and recording pause.
2. Charge the battery after each use and store it at normal room temperature.
3. Recharge the battery at least once every six months. The battery is a lead-acid battery. This battery tends to discharge if not used for an extended period of time. If the battery is stored for an extended length of time without being recharged, you may not be able to recharge it.
4. A battery charged after being stored for a long period may not supply power for the specified time. Additional rechargings will help restore the battery's operation time.
5. The battery should be charged at a temperature of 50 ºF--86ºF (10ºC--30ºC) to prevent damage.
6. Do not operate the battery at temperatures below 14ºF (-10ºC) or above 95ºF (35ºC).

The battery may be damaged if operated at temperatures above 122ºF (50ºC). Operation time will decrease at extremely low temperatures.
7. After repeated chargings and use, the operation time will gradually decrease. When operation time becomes too short to be useful, it is time to replace the battery.
8. If **"CHARGE"** and **"POWER"** lights on the AC adaptor/charger start flashing, remove the battery and then reattach it. If after several attempts both lights continue to flash, this means your battery cannot take a charge and must be replaced with a new one.
The **"CHARGE"** light will not go light if a hot battery is attached to the AC adaptor/charger. Attaching an extremely hot battery to the adaptor/charger is not recommended; it should be allowed to cool down before being attached.
9. Do not short the battery's terminal.
10. Do not attempt to disassemble or modify the battery. There are no user serviceable parts inside.
11. Throwing the battery into a fire or exposing the battery to excessive heat -- over 149ºF (65ºC) could be hazardous.
12. Be sure to set the **"POWER"** switch to the **"OFF"** position before removing the battery.

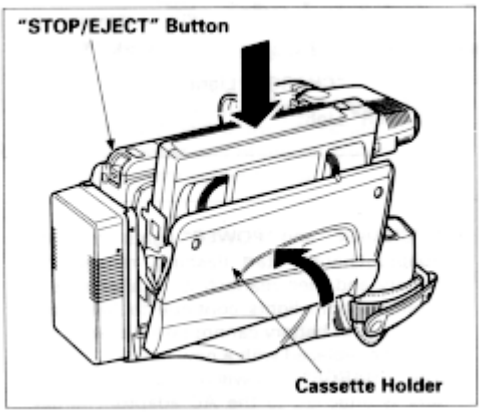
ATTENTION:
The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

MAKING A SAMPLE RECORDING

1. Connect the POWER SOURCE. (See pages 9 and 10.)
2. Press **"STOP/EJECT"** button and insert the cassette so the transparent window is toward you and the arrow toward the cassette holder. Slide the cassette into cassette holder as far as it will go.

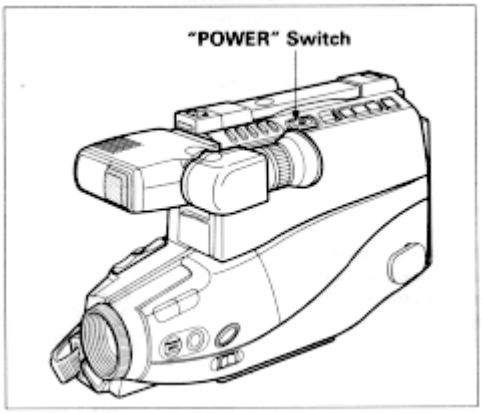
NOTE: Push in the center of the cassette all the way until it is latched by the cassette holder.

3. Press the cassette holder. The holder will latch in the operating position.



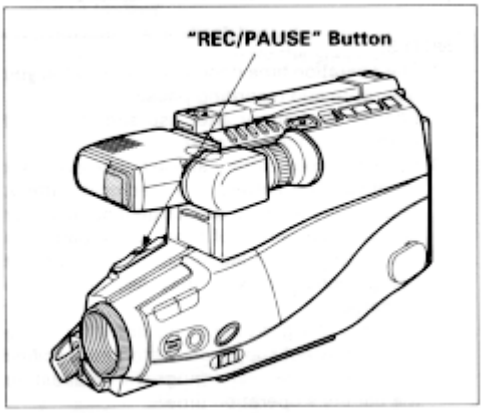
4. Press and hold the small button on **"POWER"** switch, and then slide it to the **"CAM"** position. The **"POWER**" indicator will light and the camcorder will enter record/pause mode automatically.

NOTES:
If the erase prevention tab on the cassette is removed, the **"TAPE**" indication in the viewfinder flasher for several seconds and the camcorder will not enter record/pause mode.
See page 43 for **"EYEPIECE ADJUSTMENT"**.

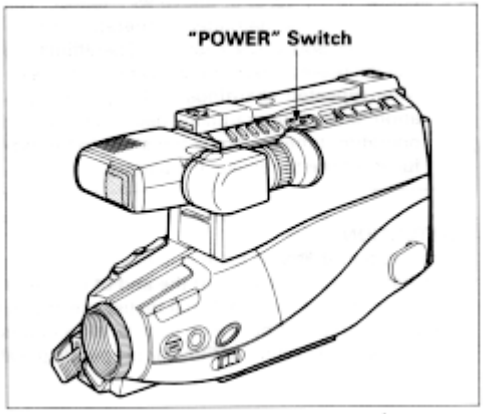


5. Now, press **"REC/PAUSE"** button to start shooting the picture. The **"REC"** indication appears in the viewfinder and you are now recording the picture you see through the viewfinder.
6. Press **"REC/PAUSE"** button to stop recording. Press the button again to resume recording. The " ▮▮ " indication will appear in the viewfinder instead of **"REC"** while the camcorder is in the record/pause (stand-by) mode.

NOTES:
The **"TAPE END"** indication starts flashing in the viewfinder when there is about five minutes recording time left on the cassette.
If the record/pause mode continues for more than 5 minutes, the camcorder's power is automatically turned off. To turn on again, press **"REC/PAUSE"** button. The camcorder enters record/pause (stand-by) mode.



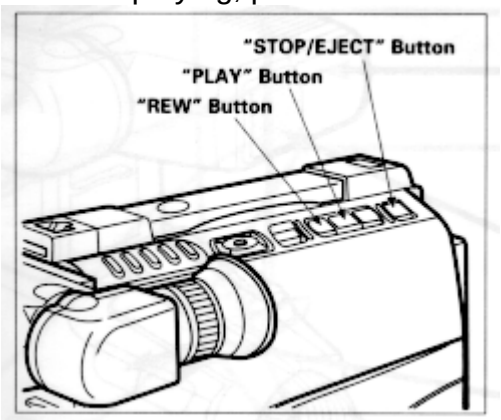
7. After recording, press and hold the small button on the **"POWER"** switch, and then slide it to **"VIDEO"**. The camcorder will now be in the stop mode.



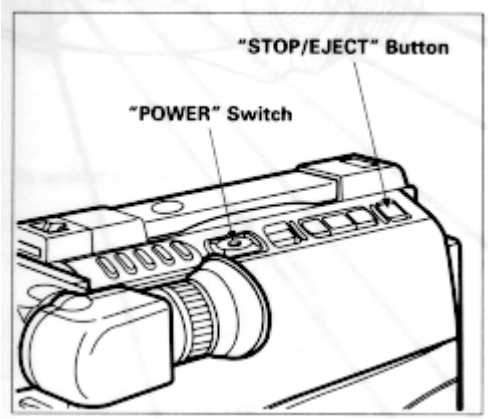
8. Press **"REW"** button. The tape will be rewound to the beginning
9. Press **"PLAY"** button. The picture you just recorded will be seen through the viewfinder.

NOTE: If you connect the camcorder to your TV, you can see the picture played back on your TV. Refer to **"VIEWING THE PICTURE PLAYED BACK ON YOUR TV"** on page 38.

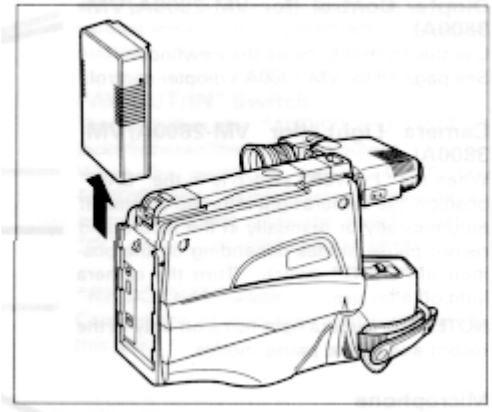
10. After playing, press **"STOP/EJECT**" button



11. Slide the **"POWER"** switch to **"OFF"** position to turn off the camcorder. Press **"STOP/EJECT"** button to remove the cassette.



12. Always remove the power source from the camcorder after use.



NOTE: If you have a cassette tape that has already been partially recorded on and you want to record the remaining blank section, see **"QUICK EDIT"** on page 27.

AUTOMATIC REWIND

When the tape reaches its end during playback, it automatically rewinds to the beginning and stops.

IDENTIFICATION AND OPERATION OF CONTROLS

Diagram of camera

Diopter Control (for VM-2800A/3800A)
Use this control to focus the viewfinder.
See page 19 for VM-1800A's diopter control

Camera Light (for VM-2800A/3800A)
When the **"POWER**" switch is in the **"CAM"** position, the camera light is turned on and

off automatically or manually in the record and record/pause modes depending on the position of **"LIGHT**" switch. Turn the camera light off after use.

NOTE: The camera light turns on only in the record and record/pause modes.

Microphone
Sensitive to sounds coming from the direction in which the camera is pointed.

[3]**"FOCUS" Control (AUTO/MAN) Button (only for VM-3800A)**
Press these buttons simultaneously to select manual or automatic focus. For manual focusing, press the ◀ or ▶ button to bring the subject into focus. When using manual focus, **"FOCUS"** appears in the viewfinder.

[4]**Lens (with Lens Cap)**
F1.6 (4~48 mm) 12:1 power zoom lens features auto focus and auto iris functions.

Infrared Ray Receiving Section (only for VM-3800A)
Receives infrared rays from the remote control.

"FADE" Button
During recording you can add a professional touch to your recordings by fading in and out of scenes. You can select three fade modes -- the white fade, wipe fade, and zoom fade.

NOTE: When you fade scenes in and out, the sound will also fade in and out with the picture. (See page 26.)

"INST.ZOOM" (Instant Zoom) Button (only for VM-3800A)
Use this button to magnify the image being recorded 1.5 times.

"ZOOM MODE" Button (only for VM-3800A)
Use this button to zoom in on a subject up to a magnification of about 100 or change the picture format (aspect ratio) from 4:3 (the picture format of an ordinary TV set) to 16:9.

"LIGHT" Switch (for VM-2800A/3800A)
When this switch is set to **"AUTO"**, the camera light turns on or off automatically according to the brightness of the object. When the switch is set to **"ON**", the camera light turns on. Set the switch to **"OFF"** to turn the light off manually.

Electronic Viewfinder (EVF)
Displays what the camcorder lens sees. The electronic viewfinder also functions as a convenient monitor during playback of recorded material.

"AV OUT/IN" Switch
This switches the **"AUDIO"** and **"VIDEO"** jacks between the input and the output. When

the switch is set to **"OUT"**, the **"AUDIO"** and **"VIDEO"** jacks can be used as output jacks, and when the switch is set to "IN", they can be used as input jacks.

"RF DC OUT" Jack

Connect the RF converter unit (optional) to this jack.

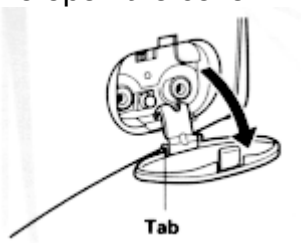
[5]**"AUDIO/VIDEO" Jacks**

These can be used as input or output jacks depending on the position of **"AV OUT/IN"** switch.

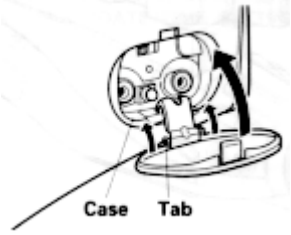
When using these jacks as outputs, connect the audio/video cable (supplied only with the VM-3800A) to these jacks and to the audio and video inputs of your TV/monitor receiver. You can also connect the RF converter unit (optional) to these jacks and your TV receiver.

Use these jacks as inputs when you supply signals from another device to your camcorder for recording.

To open the cover:



To close the cover, first hook the onto the case.



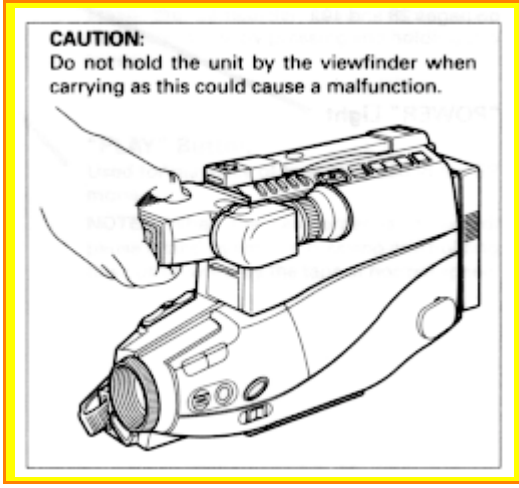


Diagram of Buttons

"TITLE" Button

Press this button to create and record personalized titles on you r videos with the camcorder's built-in titler.
(See **"TITLE RECORDING"** on page 29.)

"DATE / TIME" Button
Press this button to display the date and time in the viewfinder.
Whenever the date and time appear in the viewfinder, they will be recorded on the tape.

"RESET" Button
When the linear time counter is displayed in the viewfinder, pressing this button resets the counter to "0000".

"REVIEW" Button
Used to review the last few seconds of the recorded segment in the record/pause mode.
(See **"INSTANT REVIEW"** on page 27.)

"DISPLAY" Button
If this button is pressed, **"M"** appears beside the tape counter in the viewfinder and the tape's position is stored in memory. If the camcorder is connected to a TV/monitor receiver, the same display as that in the viewfinder appears on the screen when the **"M"** is displayed.
(See **"DISPLAY BUTTON"** and **"MEMORY"** on pages 28 and 40.)

"POWER" Light

"POWER" Switch
This switch changes the camcorder to the record mode or to the playback mode.
Press and hold the small button on this switch, and then slide it to **"CAM"** or **"VIDEO"**.

"DUBBING AUDIO/VIDEO" Button
This button is used to record new audio in place of existing audio without erasing the video. See page 35.
This button is used to record new video in place of existing video and audio. See page 36.

"REW" Button
Press this button during stop or fast forward mode, and rewinding starts. **"◄◄"** appears in the viewfinder. Press the button during playback of tape, and the tape is played back in the rewind direction approximately 3 times faster than the normal speed to confirm the recorded contents.
Press **"PLAY"** button to return to normal playback mode or press **"STOP/EJECT"** button to stop tape movement.

NOTE: You can also visually scan backward when the camcorder is in record/pause (stand-by) mode by pressing and holding this button.

"STOP/EJECT" Button

The **"STOP/EJECT"** button is used to stop playback, rewind, and fast forward operations. The **"STOP/EJECT"** button has no effect during record operation.

This button is used in the stop mode to open the cassette holder.

"F.FWD" Button

Press this button during stop or rewind mode, and fast-forwarding starts. **"▸▸"** appears in the viewfinder.

Press the button during playback of tape, and the tape is played back in the forward direction approximately 3 times faster than the normal speed to confirm the recorded content.

Press "PLAY" button to return to normal playback mode or press **"STOP/EJECT"** button to stop tape movement.

NOTE: You can also visually scan forward when the camcorder is in record/pause (stand-by) mode by pressing and holding this button.

"PLAY" Button

Used for playback of tape recorded in the SP mode.

NOTE: When the camcorder is in the record/pause (stand-by) mode, pressing and holding this button will play the tape at normal speed.

(REW, PLAY, F.FWD, and STOP/EJECT)

These buttons are used for title making buttons when the **"TITLE"** button is pressed. (See **"TITLE RECORDING"** on page 29.)

These buttons may be also used to set the date and time during pause (stand-by) mode. (See **"DATE/TIME SETTING"** on page 20.)

Camera Diagram

"BATTERY" Release Lever

Releases the battery attached to the video camcorder.

Cassette Holder

Press **"STOP/EJECT"** button in the stop mode to open the cassette holder. Be aware of the cassette direction when inserting.

NOTE: Power source must be connected to open the cassette holder.

"DC IN 9.6V" Jack

When using the AC adaptor/charger (provided) or the car battery cord (optional), connect this jack and the **"DC OUTPUT"** of the AC adapter/charger or the car's cigarette lighter socket.

Graphics in the Electronic Viewfinder

"BRIGHT', "COLOR" and "TINT" controls (for VM-2800A/3800A)
Use to adjust the picture color in the viewfinder. See page 43.

"REC/PAUSE" Button
This button is used to control the camcorder. When this button is pressed with the camcorder set to the recording mode, the tape runs to start recording. **"REC"** appears in the viewfinder. When this button is pressed again, **" ▮▮ "** appears instead of band the tape stops and the camcorder enters the record/pause (stand-by) mode.

NOTE: This button may be also used to display a still picture during the playback mode.

Power Zoom Switch/ "TRACKING" Control
This switch performs zooming electrically.
"W": Picture becomes wider gradually.
"T": Picture becomes telescopic gradually.
Used when playing a tape recorded on another VCR. Adjust for best picture. Ejecting the cassette returns the tracking to the normal position.

Lens Cap Tab
Place the lens cap on this tab when you are ready to record a scene. The tab also prevents the lens cap from swinging around on tits cord.

For VM-1800A (click to see illustration)
"BRIGHT" and "FOCUS" Controls
Use to adjust the picture in the viewfinder. The small "BRIGHT' and "FOCUS" controls are set at the factory and should require no adjustment. If they ever require adjustment, use a plastic screwdriver. Make the adjustment with caution to prevent damaging the miniature controls.

For VM-1800A
Diopter Control
To use the electronic viewfinder, turn this control for your optimum focus adjustment.

Hand Strap
Adjust to best fit your hand.

DATE/TIME SETTING

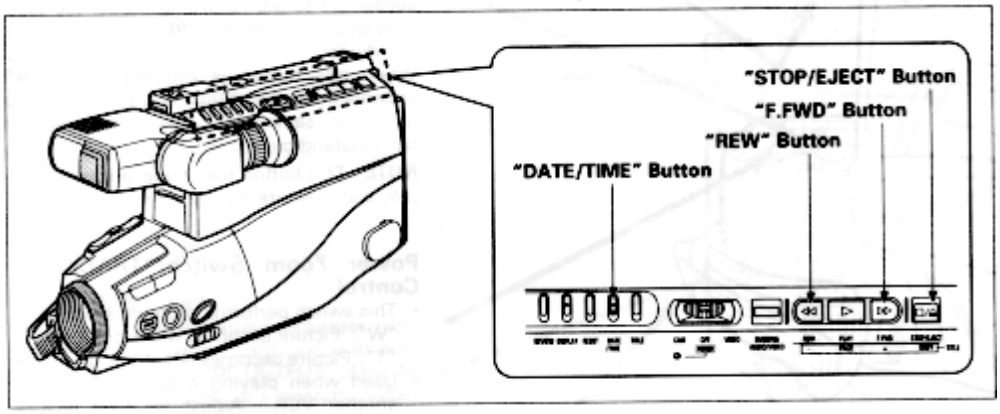
The date and time can be recorded on your tape to act as a handy reference when viewing them at a later time.
Use the following procedure to set up this display for the current date and time.
The time backup battery is rechargeable. Charge the backup battery every two months.
Set "POWER" switch to **"OFF"** position and connect a charged battery or AC adaptor/charger to the camcorder for 24 hours. Make sure that the current time is displayed correctly before you start recording.

DATE/TIME SETTING

NOTES:

The backup battery should be charged every two months. If it is not charged periodically, it will be over-discharged and its life will be shortened.

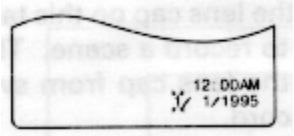
A cassette cannot be loaded or ejected when setting the date and time.



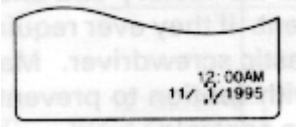
1. Press and hold the small button on **"POWER"** switch, and then slide it to **"CAM"** position.

2. Press **"DATE/TIME"** button.

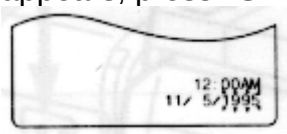
Date and time appear in the viewfinder and "1" flashes.



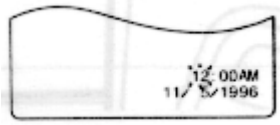
3. Press **"F.FWD"** button to select correct month. Hold button down to advance rapidly. If you go past the month you want to set, press **"REW"** button. When the correct month appears, press **"STOP/EJECT"** button.



4. Press **"F.FWD"** button to select correct date. Hold button down to advance rapidly. If you go past the date you want to set, press **"REW"** button. When the correct date appears, press **"STOP/EJECT"** button.

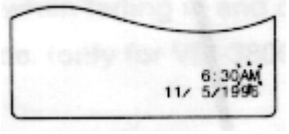


5. Press **"F.FWD"** or **"REW"** button to select year, and then press **"STOP/EJECT"** button.

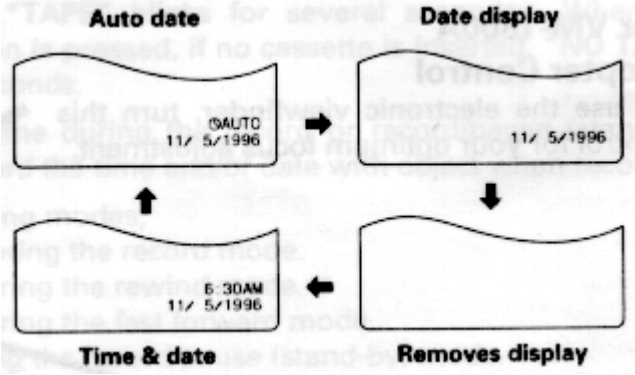


6. Press **"F.FWD"** or **"REW"** button as many times as may be required to select the correct hour, and then press **"STOP/EJECT"** button.

7. Repeat step 6 to select minute and AM/PM.



8. After setting AM or PM, press **"DATE/TIME"** button to change the display and start the internal clock. It is recommended that you press **"DATE/TIME"** button to match the time signal.
9. Press **"DATE/TIME"** button after setting the clock. The display will change as follows each time the button is pressed.



NOTE: The date/time graphics will be recorded whenever they appear in the viewfinder.

To correct date/time information after starting the date/time

1. Press and hold **"DATE/TIME"** button, and then press **"STOP/EJECT"** button. The month starts flashing.
2. Correct the incorrect digit by using **"F.FWD", "REW"** and **"STOP"** buttons.

To correct date/time information during programming

Press **"STOP/EJECT"** button repeatedly until the digit that is incorrect flashes. Correct the incorrect digit by using **"F.FWD", "REW"** and **"STOP/EJECT"** buttons.

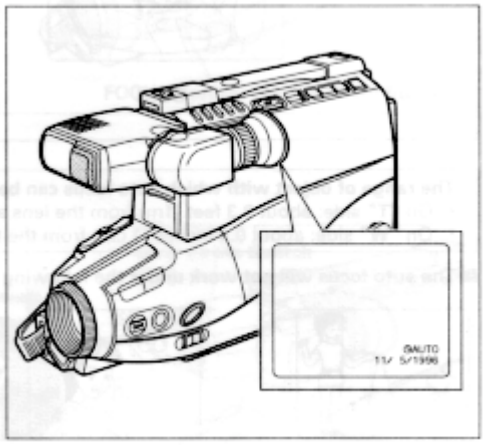
AUTOMATIC DATE RECORDING

This feature records the date automatically once a day. After you begin recording, the date is recorded automatically for 10 seconds. The same date is recorded again in the following cases.

When the cassette is replaced.
When "AUTO" is displayed again after being switched to the date display.
When the recording is for less than 10 seconds.

If the date changes while recording continues over 10 seconds, the date is recorded for 10 seconds when recording is restarted after the camcorder has been set to the standby mode.

Press **"DATE/TIME"** button until " AUTO " and the date appear in the viewfinder before you begin to record. The date will be recorded whenever it appears in the viewfinder.



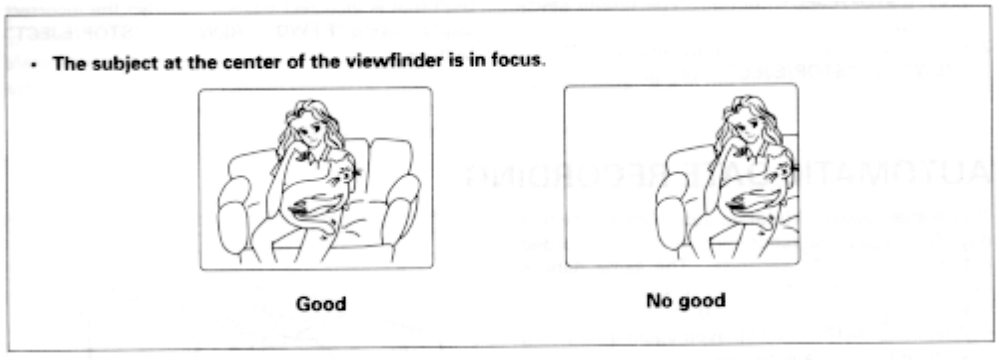
PROGRAM AE (Auto Exposure)

Program AE automatically selects the shutter speed 1/60, 1/100, 1/120, 1/180, 1/250, 1/350, 1/500, 1/750, 1/1000, 1/1500, 1/2000 or 1/4000 second that is optimum for the brightness of the subject. The iris is also adjusted automatically in response to the shutter speed.

AUTO FOCUS

The camcorder focuses the subject in the center of the viewfinder automatically.

NOTE for VM-3800A: If **"FOCUS"** appears in the viewfinder, manual focus is engaged. Press the FOCUS control (AUTO/MAN) buttons simultaneously to return to auto focus.



The range of the object with which auto focus can be used.

On **"T"** side: about 3.3 feet (1m) from the lens surface to infinity.
On **"W"** side: about 0.4 inches (1 cm) from the lens surface to infinity.

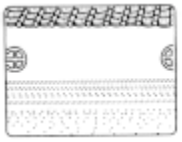
The auto focus will not work under the following conditions.

1. Objects not in the center of the viewfinder.

2. Objects at far and near positions at the same time.

3. Objects lit by a spotlight or neon signs, etc.

4. Objects behind glass with water droplets or dust on it.


5. Objects with almost no difference in brightness such as a white wall.

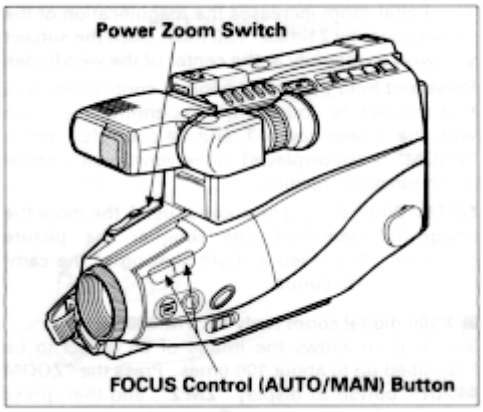
6. Objects moving rapidly.

7. Dark objects.

MANUAL FOCUS (Only for VM-3800A)

1. Press the FOCUS control (AUTO/MAN) buttons simultaneously. **"FOCUS"** appears in the viewfinder. You can adjust the focus manually.
2. Use the power zoom T control to zoom up completely to your subject. If you don't use the T control to zoom to the picture you want, the picture may fall out of focus when actual recording starts.
3. Pressing the FOCUS control (AUTO/MAN) ◂ (far) or ▸ (near) button until the subject is in focus.
4. Use the power zoom W control to zoom back to the picture you desire.

NOTE: To return to auto focus press the FOCUS control (AUTO/MAN) buttons and **"FOCUS"** disappears from the viewfinder.



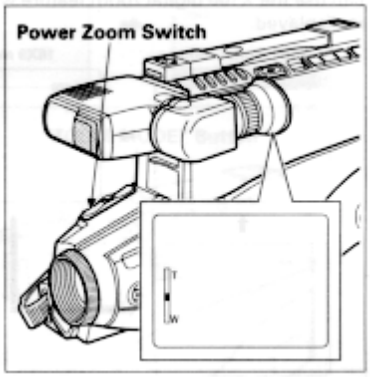
POWER ZOOM

Press power zoom switch on the **"W"** side, and the picture gradually widens.

Press the power zoom switch on the **"T"** side, and the picture gradually becomes telescopic.

The zooming speed is slow when the power zoom switch is pressed lightly, and the zooming speed is fast when the switch is pressed strongly.

When power zoom switch is operated, the zoom position is displayed in the viewfinder in 10 steps for several seconds.

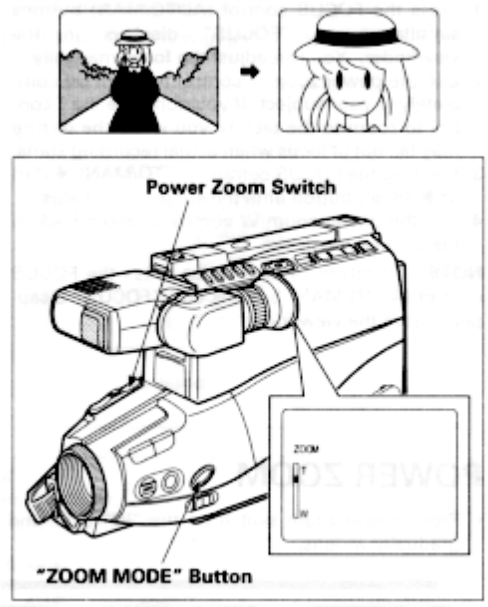


DIGITAL ZOOM

DIGITAL ZOOM

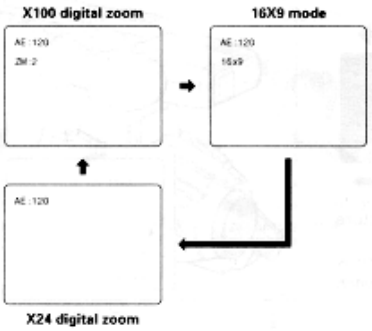
The digital zoom increases the magnification of the power zoom by 2 times. You must place the subject you wish to magnify at the center of the viewfinder. Press and hold the power zoom T control until you find the picture you want. You control the zoom with the power zoom T and W controls. When **"ZOOM"** is not displayed in the viewfinder, normal zoom functions resume.

NOTE: When the digital zoom is used, the more the image is magnified, the rougher the picture becomes. Also even a slight shaking of the camcorder is conspicuous.



X100 digital zoom (only for VM-3800A)

This feature allows the image to be magnified up to about 100 times. Press the **"ZOOM MODE"** button to display **"ZM:2"**, and then press and hold the power zoom T control until you reach your desired magnification. Each time the **"ZOOM MODE"** button is pressed, the display in the viewfinder will change as follows. You can use the X100 digital zoom feature when **"ZM:2"** is displayed.



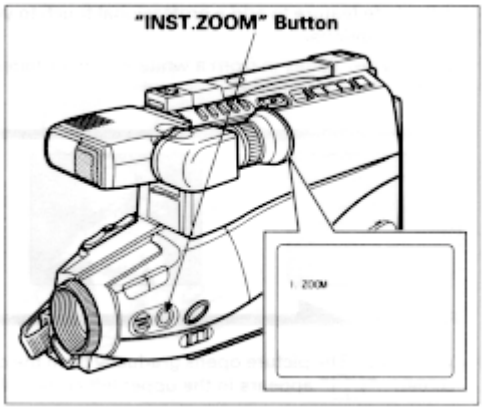
After using the X100 digital zoom feature, press the **"ZOOM MODE"** button so that **"ZM:2"** is no longer displayed in the viewfinder.

NOTES:
When digital zoom is used, the more the image is magnified, the coarser the picture becomes. Also even slight shaking of the camcorder is conspicuous.
When **"16:9"** is displayed in the viewfinder, the picture format is switched from 4:3 to 16:9. See **"16:9 MODE"** on page 25.

INSTANT ZOOM (Only for VM-3800A)

The instant zoom feature activates the digital zoom to magnify the subject 1.5 regardless of zooming engaged by the power zoom T and W controls. Press the INST. ZOOM button. **"I.ZOOM"** appears in the viewfinder and the picture is magnified 1.5 times.

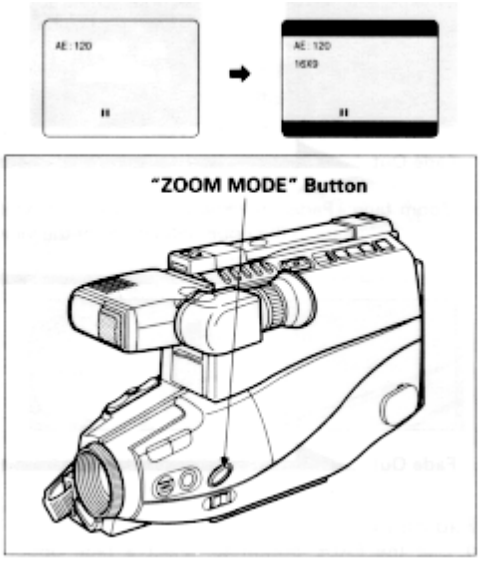
NOTES:
To return to the original zoom position, press the INST. ZOOM button so that **"I.ZOOM"** disappears from the viewfinder.
When the instant zoom is used, the more the image is magnified, the rougher the picture becomes. Also even slight shaking of the camcorder is conspicuous.



16:9 MODE (Only for VM-3800A)

The picture format can be switched from 4:3 (the picture format of an ordinary TV set) to 16:9. Press the **"ZOOM MODE"** button twice to display **"16:9"**; the top and bottom of the picture in the viewfinder become black bars. After using the 16X9 mode, press the **"ZOOM MODE"** button so that **"16:9"** is not displayed in the viewfinder and restore the the normal picture.

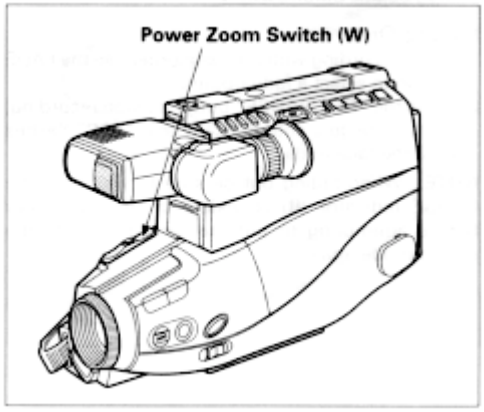
MACRO



MACRO

[6]Allows you to shoot objects as close as 0.4 inches (1 cm) from the lens tip.
Press and hold **"W"** side of power zoom switch. An object is auto focused.

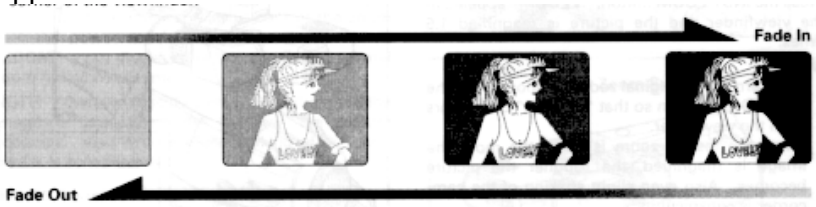
NOTES:
Determine the size of the object by moving the camera backward and forward.
Be careful as the lighting may tend to be insufficient when shooting in the above conditions.



FADE IN / FADE OUT

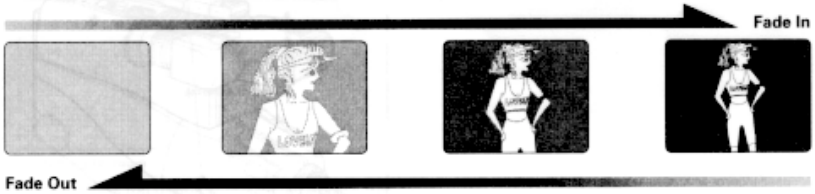
Use the fade feature to add a professional touch to your recordings. Use the FADE button to select one of the three fade options.
White fade: Fades in from a white screen or fades out to a white screen. "" appears in the

upper left corner of the viewfinder.



Wipe fade: The picture opens gradually from the center of a black screen or closes into the center to a black screen. "" appears in the upper left corner of the viewfinder.

Zoom fade: Fades in while zooming from a white screen or fades out while zooming to a white screen. "" appears in the upper left corner of the viewfinder.



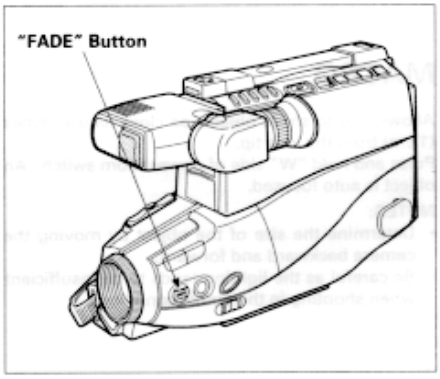
Fading In

1. Use the FADE button to select a fade option before recording.
2. Press the **"REC/PAUSE"** button to start recording: fade then begins automatically.

Fading Out

1. While recording with the camcorder use the FADE button to select option.
2. Press the **"REC/PAUSE"** button to stop recording; the fade begins automatically and **"REC"** flashes until the fade ends.

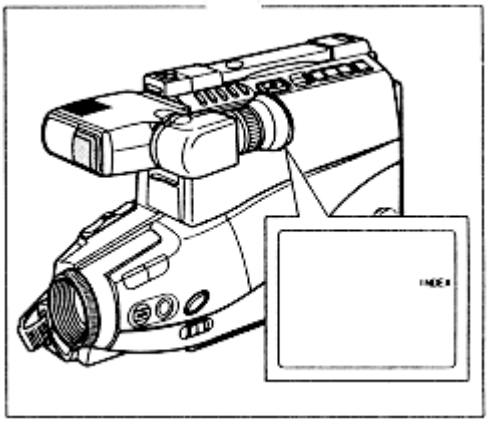
NOTE: When fading out be sure to wait until the PAUSE indicator ( ) is visible in the viewfinder before attempting to pit the camcorder into the record mode again.



INDEX SIGNAL RECORDING

[7]Indexing your tapes while recording makes it easy to find desired program segments when you play back the tape in a VCR that has a compatible indexing feature called the "VHS Index Search System". See your VCR's instruction manual for index playback instructions.
"INDEX" signals are recorded when the following operations are performed.
When power is turned on about 4 hours after it is switched off and then recording is started.
When power is turned on after the date is changed to the next day with the power off and then recording is started.

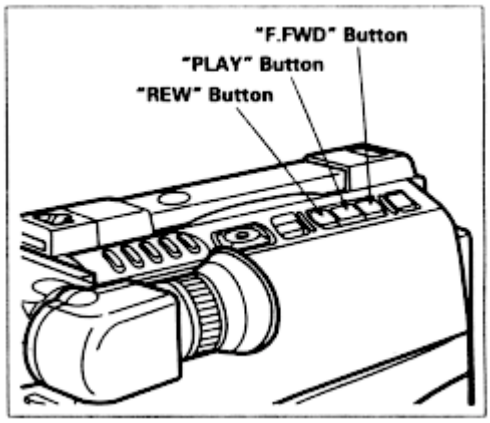
NOTE: "INDEX" is displayed in the viewfinder, and when an **"INDEX"** signal is recorded, **"INDEX"** disappears.



QUICK EDIT (Edit Search)

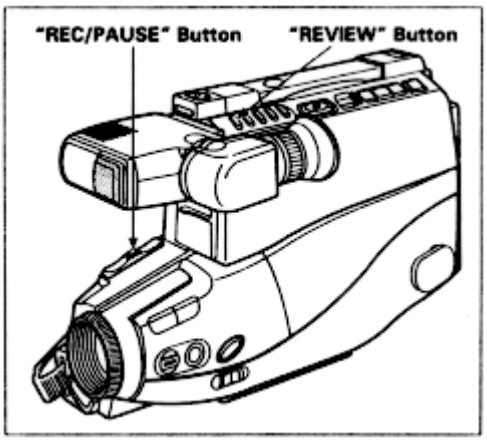
The quick edit feature allows you to search for the end of previously recorded material, or find a particular spot on your tape, to begin your editing, or recording new material. Quick edit is used while the camcorder is in the record/pause (stand-by) mode. By holding down the **"F.FWD", "REW",** or **"PLAY"** button, you can visually search or play your tape. Releasing the buttons (**"F.FWD", "REW",** or **"PLAY"**) immediately stops the

tape at that position.



INSTANT REVIEW

1. In record/pause (stand-by) mode, press **"REVIEW"** button, and the last few seconds of the recorded scene is played back in the reverse direction and then played back in the forward direction.
2. When the tape reaches the end of the scene you have just recorded, the camcorder returns to the record/pause (stand-by) mode. Recording starts again when the **"REC/PAUSE"** button is pressed again.

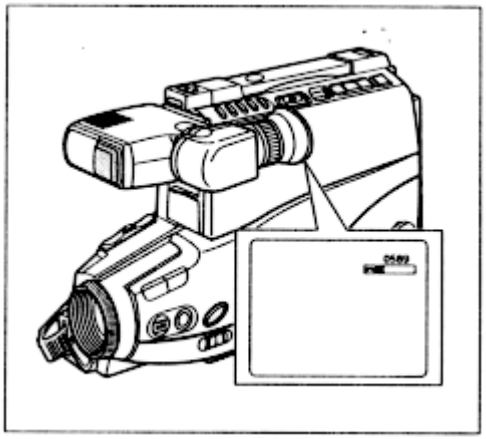


TAPE COUNTER

Load a cassette into the camcorder and perform recording or playback; the counter indicates the amount of tape transported as a 4-digit number.

NOTES:
The tape counter does not operate when nothing is recorded on the tape.
Counter changes to 0000 when cassette is ejected.

DISPLAY BUTTON



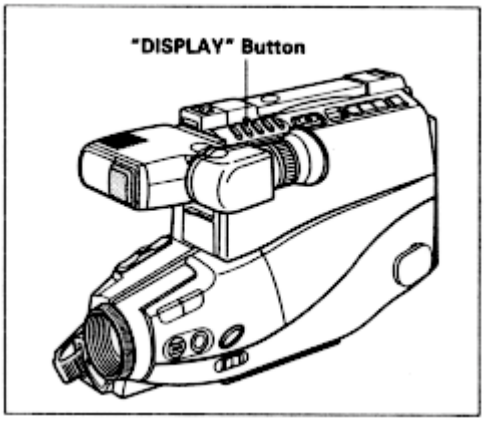
DISPLAY BUTTON

Each time the **"DISPLAY"** button is pressed, the display in the viewfinder switches as follows.

Tape counter with memory

Tape counter

When the tape counter with memory is displayed in the viewfinder, the same display appears on the screen of the connected TV/monitor receiver.

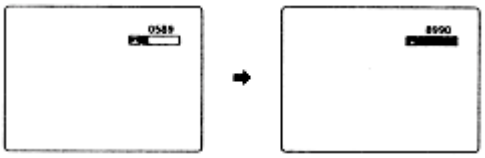


REMAINING TAPE

The tape remaining display shows the remaining tape that can be used for recording and playback, using seven dashes. This feature is handy when recording since it lets you know how long you can record on the loaded tape.
Insert a cassette in the camcorder and start recording or playback; 10 seconds later, the remaining tape will be displayed. When the cassette is ejected, the display will

disappear. "⏀------" is displayed for 10 seconds after the tape starts to run.

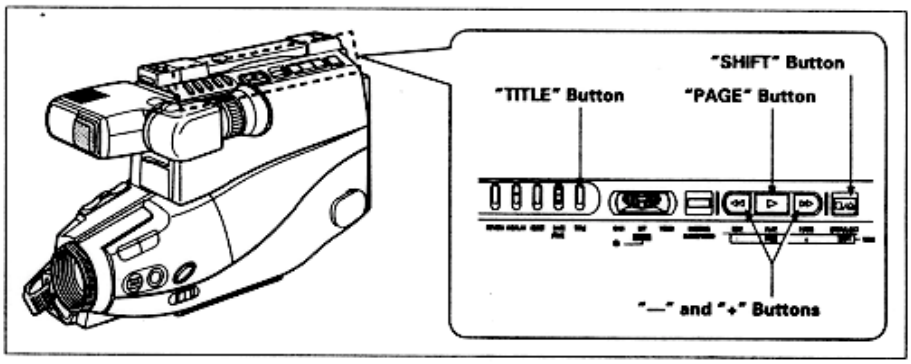
NOTE: When the remaining recording tape time becomes less than about five minutes, **"TAPE END"** flashes in the viewfinder.



TITLE RECORDING

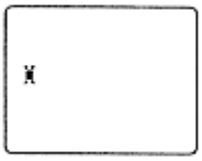
You can easily create and record personalized titles on your videos with the camcorder's built-in titler. The titler will store 2 different title pages in memory. Once a title is stored, it can be displayed and recorded at any time. Each title page can contain two lines of 16 characters each. The titler contains 47 different characters for creating titles.

NOTE: A cassette cannot be loaded or ejected when creating a title.



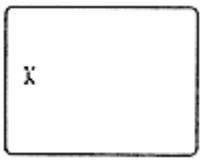
Creating a title

1. Attach a power source to the camcorder and slide **"POWER"** switch to either **"CAM"** or **"VIDEO"** position.
2. Press **"TITLE"** button. The flashing cursor will appear in the viewfinder.

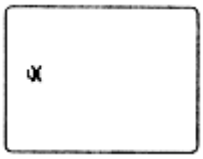


3. Press **"SHIFT"** button repeatedly to move the flashing cursor to the place you want to begin your title.
4. Select the first character for your title by pressing the **"-"** or **"+"** button repeatedly until the desired character appears.

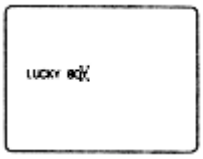
NOTE: Each title can contain up to two lines of 16 characters each. A chart showing the characters contained in the titler is located on page 30.



5. After you have selected the first character, press **"SHIFT"** button to move the flashing cursor to the place you want the next character.



6. Repeat steps 4 and 5 until you have completed the title.



NOTE: Character may flash, however it will be recorded correctly without flashing.

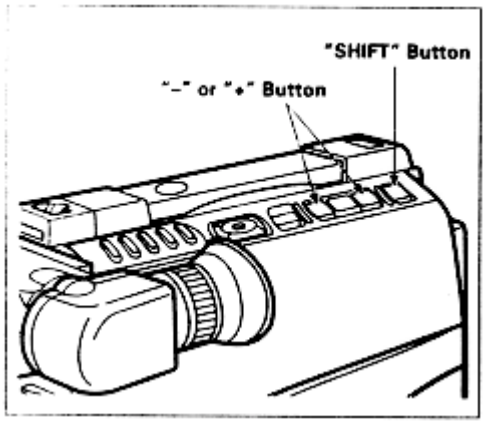
7. After completing your title, press **"PAGE"** button and create the title on another page.
8. After creating the title, press **"TITLE"** button to remove the title graphics from the viewfinder. Now title graphics is stored in memory.

NOTE: As long as the correct current time can be displayed, the title is held in memory.

Correcting errors during title storage

1. Press **"Shift"** button repeatedly until the character to be corrected will flash.
2. Press either "-" or "+" button until the correct character appears.

NOTE: The correct character may flash, however it will be recorded correctly without flashing.



Recording titles on a tape in the camcorder

1. Slide **"POWER"** switch to **"VIDEO"**.
2. Locate the position on the tape that you wish to record the title.
3. Set **"POWER"** switch to **"CAM"**.
4. Press **"TITLE"** button to display the title graphics.
5. Press **"PAGE"** button until the title you wish to record appears in the viewfinder.
6. Press **"REC/PAUSE"** button to start the title recording.
7. Press **"TITLE"** button to remove the title graphics from the viewfinder. The camcorder will now record as normal.

NOTE: If you are planning to video tape an event you must prepare your titles in advance, then by pressing **"TITLE"** button superimpose the title over the scene as it's being recorded. You cannot go back and record titles over existing video without erasing the previously recorded material.

Recording titles on another VCR while playing a tape back with the camcorder

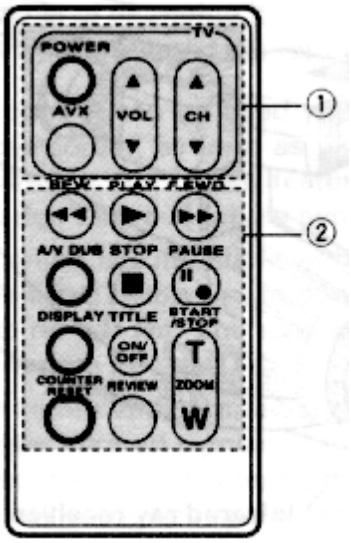
1. Connect the camcorder and VCR. (See page 41.)
2. Select the title you wish to record from page 1 or page 2. The last title selected will appear first. Press **"TITLE"** button to turn title off.
3. Set the VCR in the recording mode and camcorder in the playback mode.
4. Press **"TITLE"** button when you see the scene where you want to record the title.
5. Press **"TITLE"** button to erase the display from the viewfinder.

Chart of characters available in the titler

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 0 1 2 3 4 5 6 7 8 9 ? ' . / , - ; : < > ! (blank)

USING THE WIRELESS REMOTE CONTROL (Only for VM-3800A)

Use the wireless remote control to operate the camcorder from a distance.



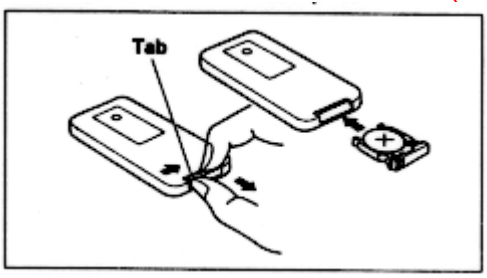
(1) TV Control Buttons
Used for controlling the TV.
POWER: Turns the TV on and off.
AVX: Used for recording picture and sound from an auxiliary input.
VOLUME: Increase (▲) or decrease (▼) the volume.
CHANNEL: Top (▲) button switches to the next higher channel, bottom (▼) button switches to the next lower channel. For these to operate, you must have preset your channels.
(See CONTROLLING YOUR TV WITH THE CAMCORDER'S REMOTE CONTROL" on page 33.)

(2) Camcorder Control Buttons
These buttons on the remote control have the same functions as the corresponding buttons on the camcorder.

NOTE: The zoom switch on the remote control cannot change the zoom speed, but provides only low-speed zooming.

Loading Battery

1. Push the tab to the right of the remote control and hold it; then remove the battery holder.

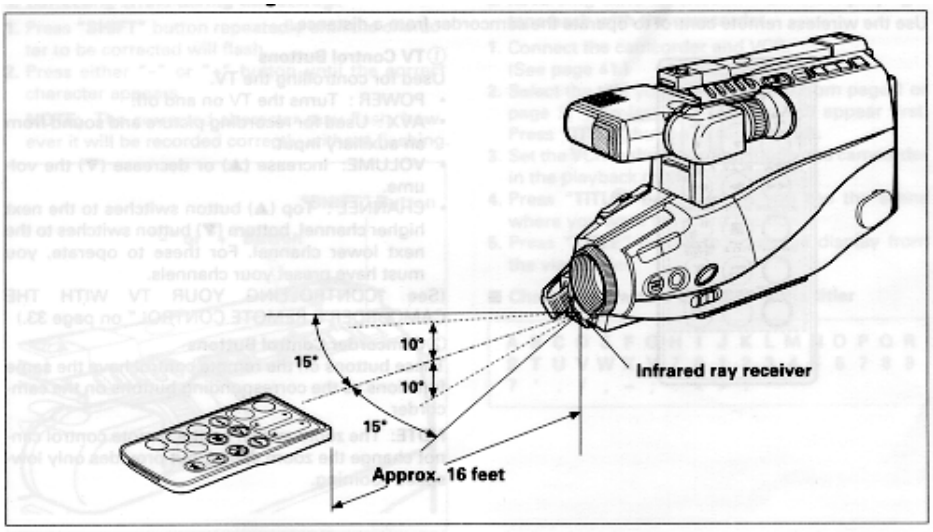


2. Press the PLAY button and hold it for about two seconds.
3. Insert the battery with the positive (+) terminal facing up.
4. Replace the battery holder with battery in the remote control making sure that it is fully inserted.

WARNING: KEEP THE BATTERY AWAY FROM CHILDREN AND PETS. IF SWALLOWED CONSULT A PHYSICIAN IMMEDIATELY FOR EMERGENCY TREATMENT.

NOTES:
Replace remote control battery with 3V micro lithium cells such as Maxell CR2025 or its equivalent.
Dispose of battery safely in accordance with local laws. Do not dispose of in fire.
Do not short circuit the battery.
Do not take apart the battery.
Do not hold the battery with the metallic tweezers.
Do not recharge the battery.
Keep the battery in a dark, cool, dry place.

Remote Controllable Range



NOTES:
Use the wireless remote control within the range of the infrared ray receiver of the camcorder shown above.

The wireless remote control may not function in strong light such as direct sunlight or very bright artificial lighting.

Clear a path from the wireless remote control to the infrared ray receive. The wireless remote control won't work if an obstacle blocks the infrared rays.

The remote control code of this camcorder is Hitachi code [8]VCRs that have "CAM" mode button.VCR2. If you have a VCR with the same code as your Hitachi VCR may malfunction when you use the camcorder's wireless remote control control.

CONTROLLING YOUR TV WITH THE CAMCORDER'S REMOTE CONTROL (Only for VM-3800A)

The remote control is designed to be compatible with many televisions, but it will not work with every one made. If your TV does not respond the way it should when you program it as explained below, this remote may be incapable of operating it. Once you have programmed the remote, you won't have to do it again until you change the battery.

This remote control can be used with your TV as well as the camcorder, as long as your TV comes with a remote control. This feature comes in handy - you don't have to juggle two remotes.

The remote control is compatible with the fourteen makers of TVs listed below - but don't be alarmed if yours is not on our list. You may still be able to program the remote for your TV.

Every TV that comes with a remote control is set up to detect certain infrared signals. You need to program the camcorder remote control to send signals that your TV will recognize and respond to. Here's what to do:

Programming the Remote Control

Turn the television on (any channel is okay).

Aim the camcorder's remote control at your TV set. Hold down the CH(▲) button while you press the button corresponding to your brand of television as shown in the chart.

For example, if you have an RCA television, press CH(▲) and display at the same time. If this button combination sends a signal that matches with your TV, the channel will change on the TV, and you'll know the remote is set to control the television.

If that button combination does not change the TV channel, go through the whole list of button combination one by one until you find one that does change your TV channel. Also, if your brand of TV is not listed in the chart, try all the buttons. One of them may work for you. If the TV still doesn't change after going through all the button combinations listed, it is likely that you will not be able to program this remote control for your TV.

TV Brands	**Press CH(▲) and this button**
Hitachi	AVX

Zenith	VOL(▼)
Sony	ZOOM.(W)
Magnavox	REW
Sanyo	PLAY
Goldstar1	F.FWD
Toshiba	AV DUB
Goldstar 2	STOP
NEC	PAUSE (START/STOP)
RCA	DISPLAY
Panasonic	TITLE ON/OFF
Mitsubishi	ZOOM.(T)
JVC	COUNTER RESET
Sharp	REVIEW

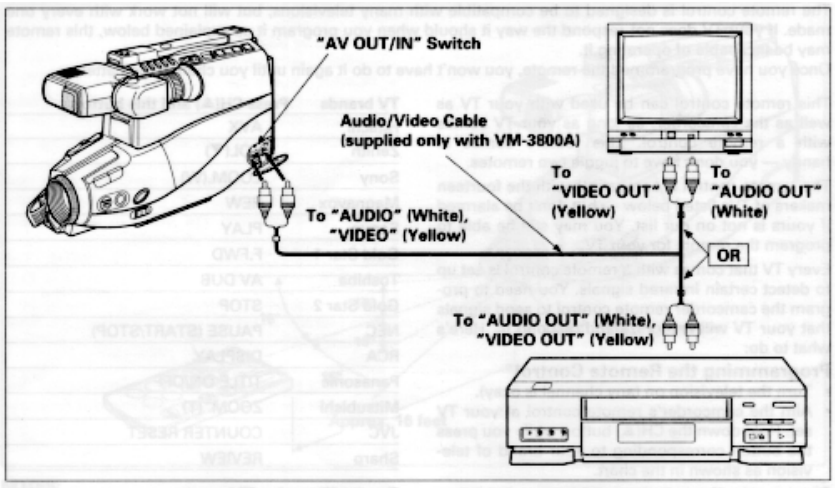
Controlling the TV

Once programmed, the camcorder's remote control is ready to control the TV.
Press the button of the TV function that you want.
Be aware that not all of your TV's functions may work even though the remote control is correctly programmed.

NOTES:
It may not be possible to control all TVs listed in this table.
The AVX button can't be used with Goldstar 2 and Sharp TVs.

RECORDING TV PROGRAMS

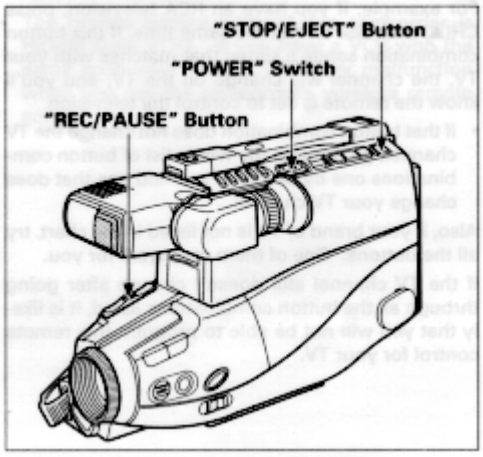
If your TV or VCR has output jacks, you can record the TV program with camcorder.



1. Connect the audio/video cable to **"AUDIO OUT"** and **"VIDEO OUT"** of your TV and VCR.
2. Connect the other end to **"AUDIO"** and **"VIDEO"** of camcorder.
3. Insert the cassette.

NOTE: Power source must be connected to the camcorder.

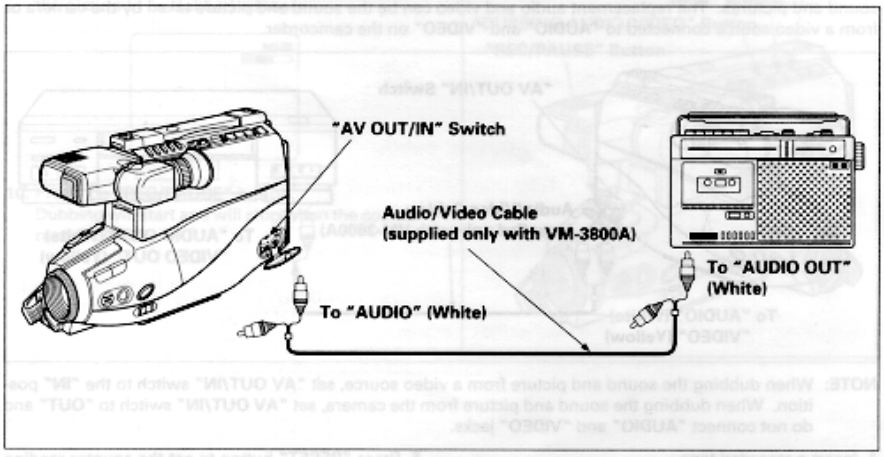
4. Set **"AV OUT/IN"** switch to **"IN"** position.
5. Press and hold the small button on **"POWER"** switch, and then slide it to **"CAM"** position. The **"POWER"** indicator will light.
6. Turn on your TV or VCR and tune it to the channel you wish to record.
7. Press **"REC/PAUSE"** button to start recording. You are now recording the TV program.
8. Press **"REC/PAUSE"** button to stop recording.
9. After recording, place **"POWER"** switch in **"OFF"** and then press **"STOP/EJECT"** button to remove the cassette.



AUDIO DUBBING

AUDIO DUBBING

The audio dubbing feature lets you record new audio (sound) on a previously recorded tape without erasing the original video.
When you audio dub a tape, the previous audio is erased and replaced with new sound.



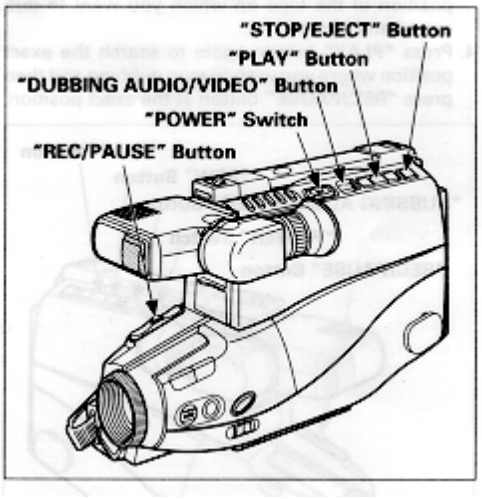
NOTES:
Sound from the built-in microphone and the AUDIO jack can be dubbed.
When dubbing audio from the built-in microphone, set **"AV OUT/IN"** switch to **"OUT"** and do not connect the **"AUDIO"** jack. When dubbing audio from the **"AUDIO"** jack, set the **"AV OUT/IN"** switch to **"IN"**.

1. Insert a recorded tape. Be sure that the record safety tab is not missing.
2. Place **"POWER"** switch to **"VIDEO"** position.
3. Play the tape and press **"REC/PAUSE"** button where you want to dub audio.
   The camcorder enters the still play mode.
4. Press **"DUBBING AUDIO/VIDEO"** and **"PLAY"** buttons at the same time.
   "A.DUB ⏸" appears in the viewfinder.

NOTE: If **"DUBBING AUDIO/VIDEO"** and **"PLAY"** buttons are pressed twice, audio and video dubbing will start. In this case, press **"STOP/EJECT"** button to release the dubbing mode.

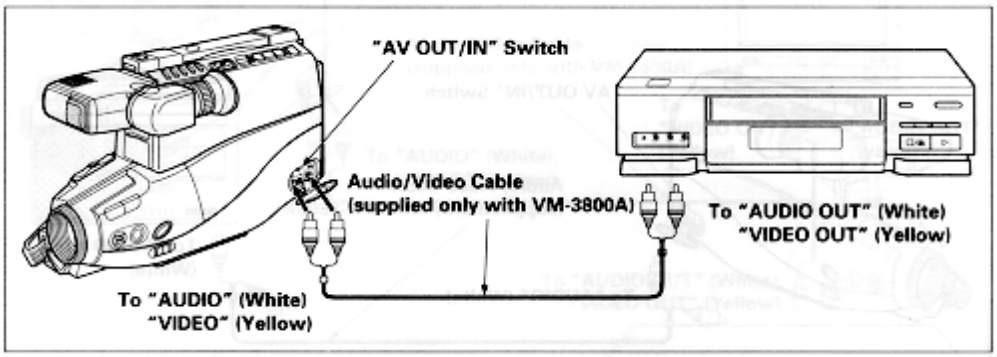
5. Press **"RECORD/PAUSE"** button to start audio dubbing.
6. Press **"STOP/EJECT"** button to stop audio dubbing.

NOTE: If counter memory **"M"** appears in the viewfinder, the tape stops automatically at the reading of **"0000"** and audio dubbing stops.



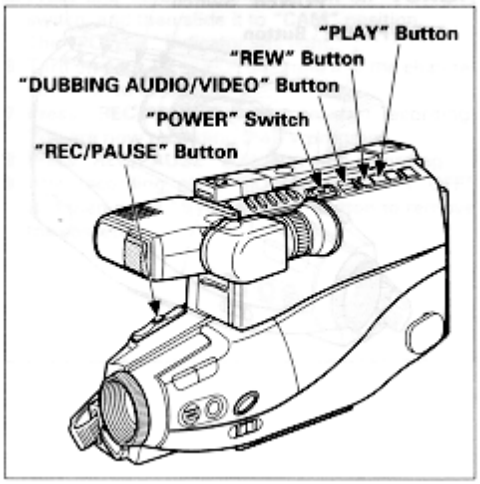
AUDIO AND VIDEO DUBBING

[9]The audio and video dubbing feature lets you record new audio (sound) and video (pictures) simultaneously on a previously recorded tape.
When you audio and video dub a tape, the previous audio and video are erased and replaced with the new sound and pictures. The replacement audio and video can be the sound and picture taken by the camera or from a video source connected to **"AUDIO"** and **"VIDEO"** jacks on the camcorder.

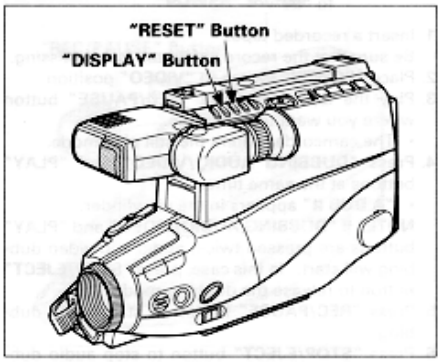


NOTE: When dubbing the sound and picture from a video source, set **"AV OUT/IN"** switch to **"IN"** position. When dubbing the sound and picture from the camera, set **"AV OUT/IN"** switch to **"OUT"** and do not connect **"AUDIO"** and **"VIDEO"** jacks.

1. Insert a recorded tape. Be sure that the record safety tab is not missing.
2. Place **"POWER"** switch in **"VIDEO"** position.
3. Press **"PLAY"** button and then **"REW"** or **"F.FWD"** button to search to the approximate position of the tape on which you want to dub sound and picture.
4. Press **"PLAY"** button again to search the exact position where you wish to stop dubbing and then press **"REC/PAUSE"** button at the exact position.

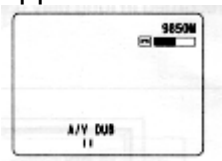


5. Press **"RESET"** button to set the counter reading to **"0000"**.
6. Press **"DISPLAY"** button so counter memory **"M"** appears.

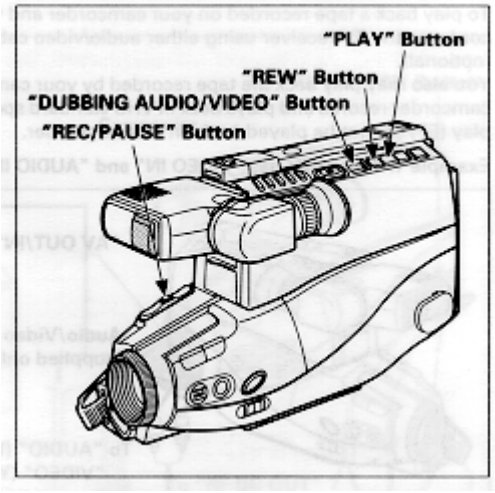


7. Press **"REW"** button to rewind the tape to the approximate position from which you want to start dubbing.
8. Press **"PLAY"** button, and when the exact position to start dubbing is reached, press **"REC/PAUSE"** button.

9. Press **"DUBBING AUDIO/VIDEO"** and **"PLAY"** buttons simultaneously twice. **"AV DUB ||"** is displayed in the viewfinder, and at the same time the picture to be dubbed appears.



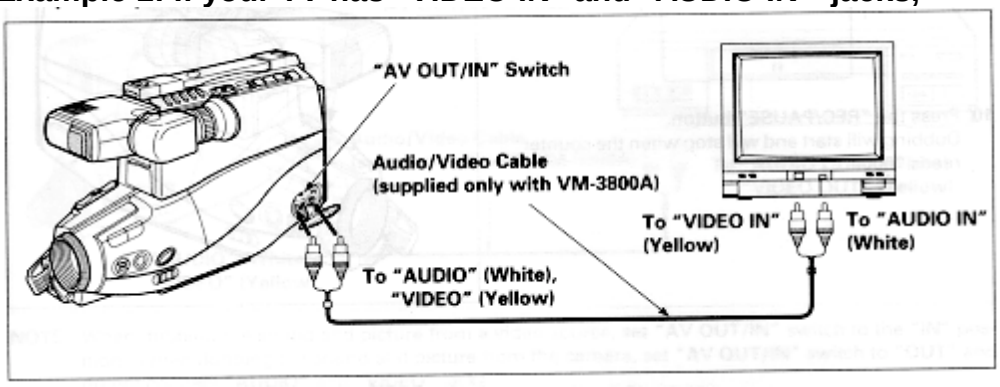
10. Press the **"REC/PAUSE"** button. Dubbing will start and will stop when the counter reads **"0000"**.



VIEWING THE PICTURE PLAYED BACK ON YOUR TV

To play back a tape recorded on your camcorder and view it on your TV receiver, you must connect the camcorder to the TV receiver using either audio/video cable (supplied only with VM-3800A) or RF converter unit (optional).
You also may play back the tape recorded by your camcorder on any other VHS video cassette recorder. The camcorder records and plays back in VHS standard speed (SP). A tape recorded in long play (LP) or extra long play (EP) cannot be played back on this camcorder.

Example 1: If your TV has "VIDEO IN" and "AUDIO IN " jacks,

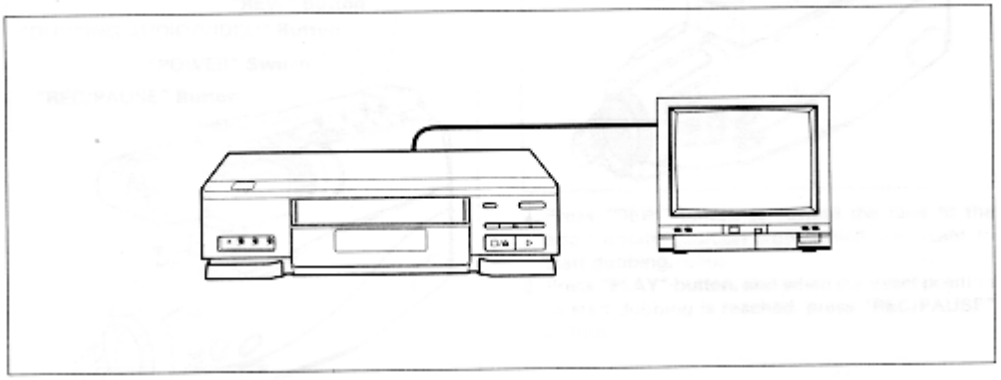


1. Connect the audio/video cable to **"AUDIO IN"** and **"VIDEO IN"** of your TV.
2. Connect the other end of the audio/video cable to **"AUDIO"** and **"VIDEO"** of your camcorder.
3. Turn on your TV.
4. Set **"AV OUT/IN"** switch to **"OUT"** position.
5. Press **"STOP/EJECT"** button on the camcorder and then insert the cassette.
6. Place **"POWER"** switch in **"VIDEO**" position.
7. Press **"PLAY"** button.
8. After playing press **"STOP/EJECT"** button.

Tracking adjustment
When playing prerecorded tapes or tapes recorded by the recorders other than your

own, black and white streaks may appear on your TV screen. If this occurs, press **"TRACKING"** control (W or T) until the streaks disappear. When the cassette is ejected, the tracking is reset to normal.

Example 2: If you have a VHS VCR,



1. Insert the recorded tape into your VCR.
2. Press **"PLAY"** button of your VCR.

NOTE: When noise appears in the played back picture, adjust **"TRACKING"** control on the VCR so there is no noise.

Example 3: If your TV is a regular TV,

Diagram of Hookup

1. Disconnect the VHF antenna leads from the rear of the TV receiver.

NOTE: Leave the UHF antenna leads connected to the TV.

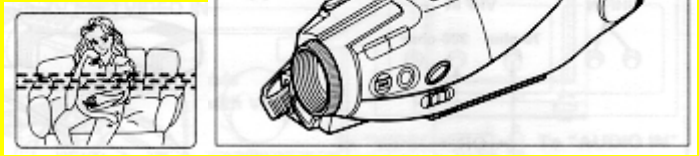
2. Connect the VHF antenna lead to **"IN FROM ANT"** on the RF converter unit. If the cable is round (75 Ohm), it will connect directly to the **"IN FROM ANT"**. If it is the flat type, (300 Ohm), connect it to the antenna adaptor (300 Ohm to 75 Ohm) and slip the adaptor on to the **"IN FROM ANT"** terminal.
3. Connect the 75 Ohm coaxial cable with antenna adaptor to **"OUT TO TV"** on the RF converter unit.
4. Connect the other end to the VHF antenna terminal on the TV, as illustrated.
5. Connect the connector cable from RF converter unit to **"RF DC OUT"**, **"AUDIO"**, and **"VIDEO"** jacks on the camcorder.
6. Turn on the TV and set to channel 3 unless channel 3 is one of the TV stations in your area. If channel 3 is used in your area, set your TV to channel 4.
7. Set the RF channel selector on the RF converter unit to **"CH3"** or **CH4"** to match the channel selector on your TV.
8. Perform same procedures in steps 4 through 8 of **"Example 1**".

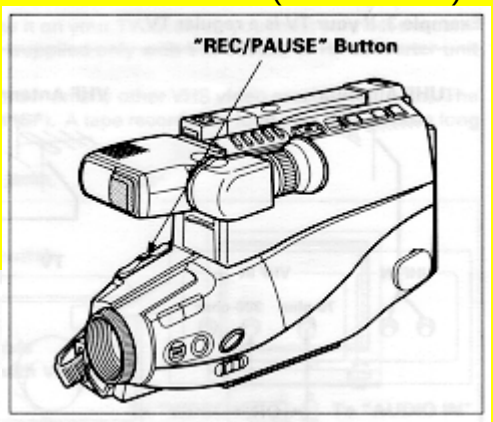
NOTE: If you want to watch a TV program with camcorder connected as illustrated, slide **"POWER"** switch of the camcorder to **"OFF"**.

STILL

When **"REC/PAUSE"** button is pressed during playback, a still picture can be seen. To start again press **"REC/PAUSE"** button and playback will be resumed.

NOTE: There will be some noise (interference) in the still picture.

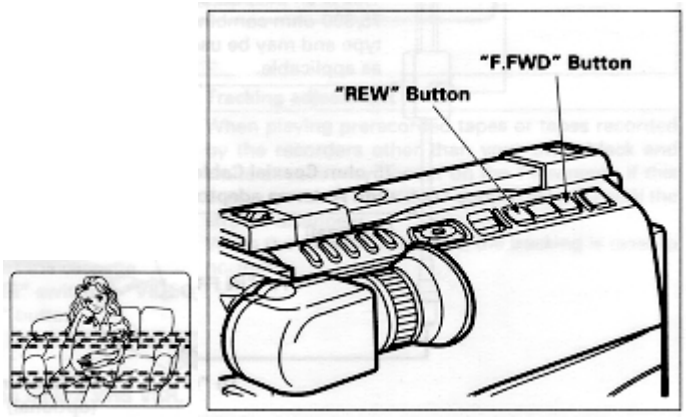




FORWARD AND REVERSE SEARCH

When you press **"F.FWD"** or **"REW"** button during playback, the tape will be played back at a speed about 3 times faster than normal playback speed, and you can easily locate a certain spot on the tape. Press **"PLAY"** button to return to normal playback mode or press **"STOP/EJECT"** button to stop tape movement.

NOTE: There will be some noise (interference) in the forward or reverse search pictures while visually scanning.

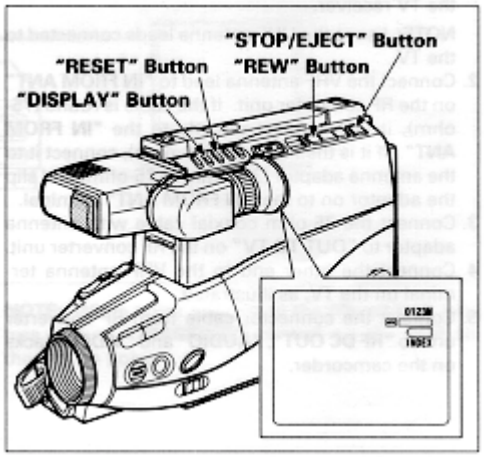


MEMORY

When the tape counter with memory indication appears in the viewfinder, a tape that is being rewound automatically stops when the counter reads approximately **"0000"**. This is useful if there is a section of tape you want to review immediately after recording or if you want to return to the same point several times in a row.

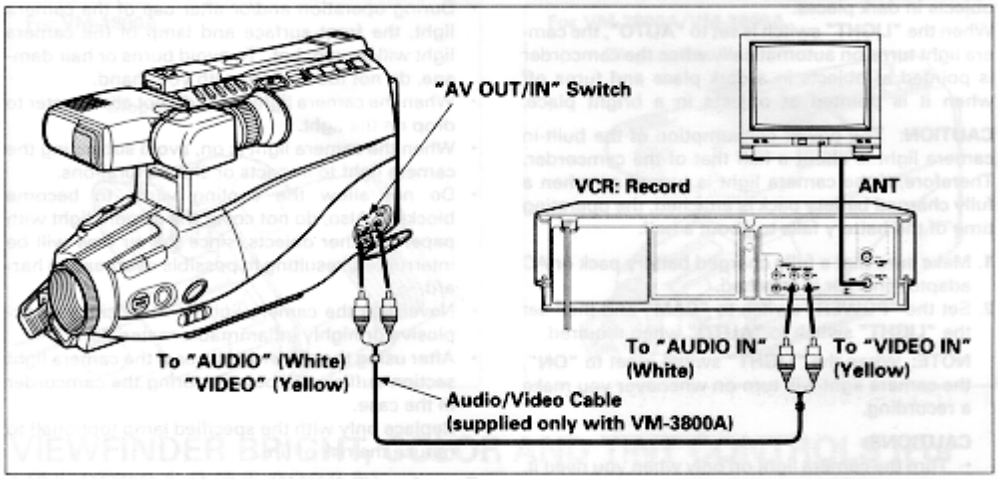
1. Press **"DISPLAY"** button. (The indicator **"M"** appears beside the tape counter.)
2. Start playing or recording a tape.
3. At the point you want playback to start, press **"RESET"** button to reset the counter to **"0000M"**.
4. Continue to play back or record.
5. Press **"STOP/EJECT"** button to stop playback, or press **"REC/PAUSE"** button to stop recording and place **"POWER"** switch in **"VIDEO"** position.
6. Press **"REW"** button. The tape will be rewound to the preselected point, at approximately **"0000M"** indication.

NOTE: The tape will also stop approximately at **"0000M"** during fast forward mode.



CAMCORDER TO VCR DUBBING

If you wish to exchange or copy some of your friend's favorite home recordings, the following instructions can be used to connect camcorder to VCR for this purpose.



1. Connect the audio/video cable to **"AUDIO"** and **"VIDEO"** of your camcorder.
2. Connect the other ends to **"AUDIO IN"**, **"VIDEO IN"** of your VCR as shown in the diagram above.
3. Set **"AV OUT/IN"** switch to **"OUT"** position.
4. Play the tape on the camcorder and record it on the VCR.

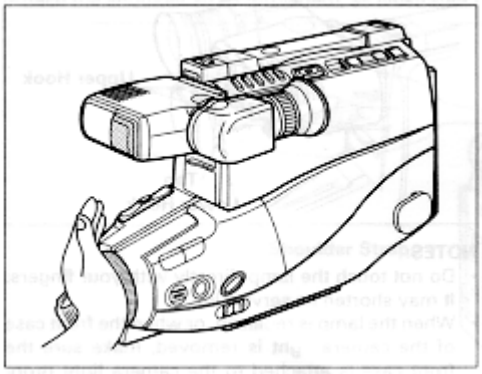
NOTE: If you connect the **"VHF OUT TO TV"** connector of VCR to the **"TV ANT"** connector, as illustrated and set VCR to **"VCR"** mode, the picture being dubbed by VCR can be monitored.

FLYING ERASE HEAD

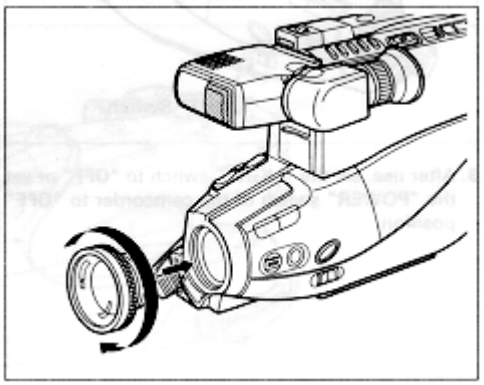
A rotating erase head which eliminates glitches and rainbow noise that occurs at the joints between recorded segments.

ATTACHING THE OPTIONAL TELE OR WIDE CONVERTER LENS

1. To remove the lens hood, turn it counterclockwise as shown in the figure.



2. Remove both caps of the telephoto or wide angle lens.
3. Screw the lens into the threads on the front of camcorder lens assembly.



USING THE BUILT-IN CAMERA LIGHT (For VM-2800A/3800A)

Use the built-in camera light it you wish to shoot objects in dark places. When the **"LIGHT"** switch is set to **"AUTO"**, the camcorder light turns on automatically when the camcorder is pointed at objects in a dark place and turns off when it is pointed at objects in a bright place.

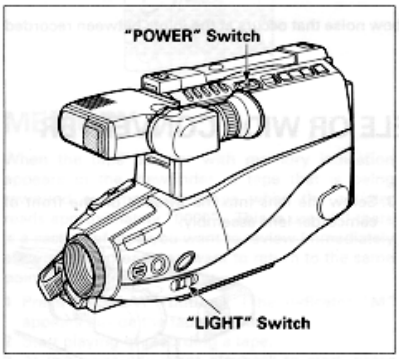
CAUTION: The power consumption of the built-in camera light is about a half that of the camcorder. Therefore, if the camera light is turned on when a fully charged battery pack is attached, the operating time of the battery falls to about a half.

1. Make sure that a fully charged battery pack or AC adaptor/charger is attached.
2. Set the **"POWER"** switch to **"CAM"** and then set the **"LIGHT"** switch to **"AUTO"** when required.

NOTE: When the **"LIGHT"** switch is set on **"ON"**, the camera light will turn on whenever you make a recording.

CAUTIONS:
Turn the camera light on only when you need it, otherwise the operating time of the battery pack is shortened due to the power consumption of the camera light.
When the **"LIGHT"** switch is set to **"AUTO"**, the camera light does not turn on unless a cassette is loaded.

CAUTION: Do not hold the unit by the built-in camera light when carrying as this could cause a malfunction.

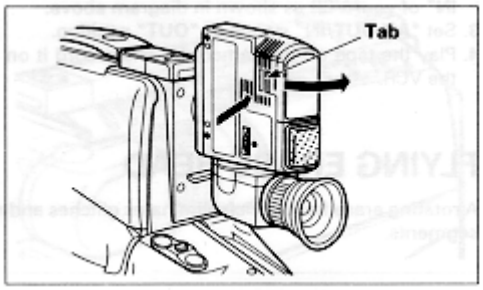


3. After use, set the **"LIGHT"** switch to **"OFF"** or set the **"POWER"** switch of the camcorder to **"OFF"** position.

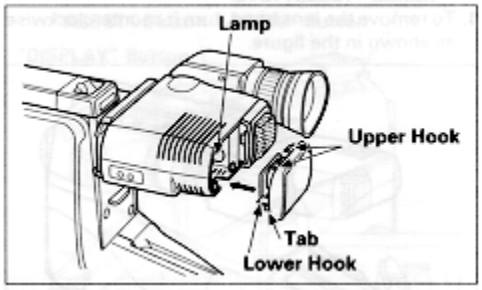
CAUTION:
During operation and/or after use of the camera light, the front surface and lamp of the camera light will be very hot. To avoid burns or hair damage, do not touch them with your hand.
When the camera light is on, do not allow water to drop on the light.
When the camera light is on, avoid subjecting the camera light to impacts or sharp vibrations.
Do not allow the cooling vents to become blocked. Also, do not cover the camera light with paper or other objects, since the air flow will be interrupted, resulting in possible overheating hazard.
Never use the camera light in the vicinity of explosive or highly inflammable materials.
After using the camera light, cool the camera light section sufficiently before storing the camcorder in the case.
Replace only with the specified lamp (optional) to reduce the risk of fire.

To replace the lamp of camera light

To remove the front case, press and hold the tab, then remove the front case.



To replace the front case, pass the lamp through the hole of the reflection plate then attach the upper hooks to the camera light, and then attach the lower hook to the camera light.



NOTES:

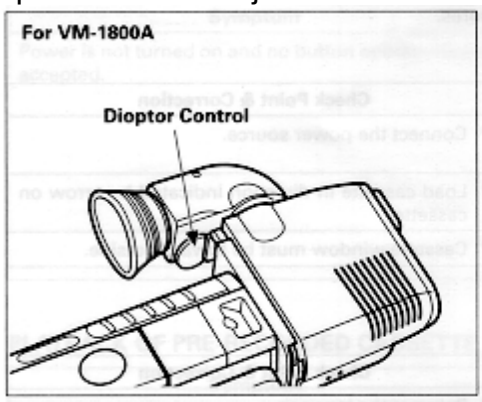
Do not touch the lamp directly with your fingers. It may shorten its service life.

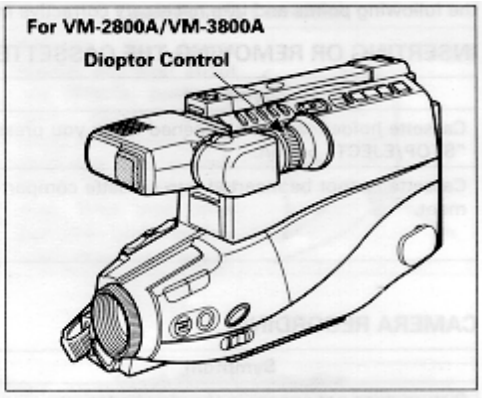
When the lamp is replaced, or when the front case of the camera light is removed, make sure the front case is attached to the camera light properly.

Consult your nearest service center to replace the lamp.

EYEPIECE ADJUSTMENT

To use the electronic viewfinder without eyeglasses on, adjust the diopter control for optimum focus adjustment.





VIEWFINDER BRIGHT, COLOR AND TINT CONTROLS (For VM-2800A/3800A)

You can adjust the viewfinder brightness, color and tint as required.

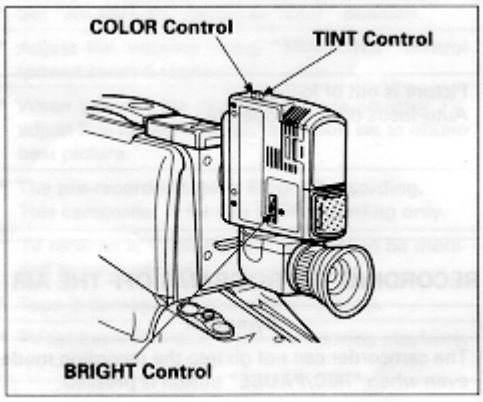
"BRIGHT" Control

Viewfinder brightness can be adjusted by turning the **"BRIGHT"** control. This does not affect the picture actually recorded by the camcorder.

"COLOR" and "TINT" Controls

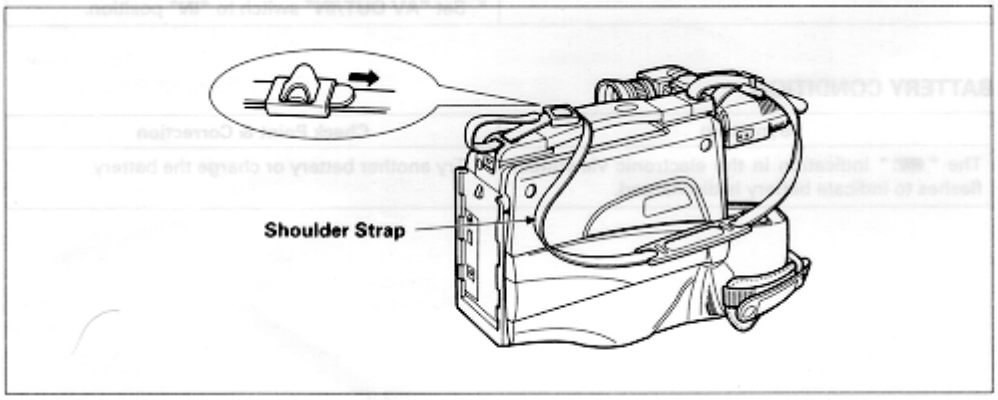
The small **"COLOR"** and **"TINT"** controls are set at the factory and should require no adjustment. If they ever require adjustment, use a plastic screwdriver. Make the adjustments with caution to prevent damaging the miniature controls.

HOW TO ATTACH THE SHOULDER STRAP



HOW TO ATTACH THE SHOULDER STRAP

Attach the shoulder strap (provided), as illustrated.



TROUBLESHOOTING

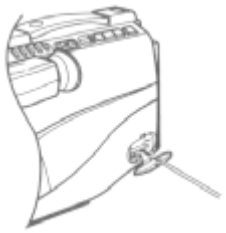
Your camcorder is a highly sophisticated instrument. It has been carefully checked and adjusted at the factory under the most rigid quality control and inspection systems. However, should problems develop, check the following points and take the necessary corrective measures.

INSERTING OR REMOVING THE CASSETTE	
Symptom	**Check Point & Correction**
Cassette holder cannot be opened when you slide “EJECT” button	Connect the power source.
Cassette cannot be inserted into cassette compartment.	Load cassette in direction indicated by arrow on cassette.
	Cassette window must be toward outside.

CAMERA RECORDING	
Symptom	**Check Point & Correction**
Picture does not appear in the viewfinder.	**Remove the lens cap.**
	`Slide the power switch to "CAMERA"
	Disconnect the AV input cable from the camera/recorder.
The camera/recorder cannot go into the recording mode, even when the start/stop button is pressed.	**Check the record protect tab on the cassette.**
	Make sure that the "FOCUS M" does not appear in the viewfinder. If it is displayed, press "Focus" select button to erase it.
Picture is out of focus.	**Auto-Focus does not operate if a special effects filter is attached.**

NO OPERATION IS ACCEPTED

Symptom	**Check Point & Correction**
Power is turned on, but no button operations are accepted.	Remove the power source, and after about one minute, push the reset switch gently using a toothpick, etc. until you feel a click. Since this erases the date, time and other customer preferred features, reset them again.



PLAYBACK OF PRE-RECORDED CASSETTE

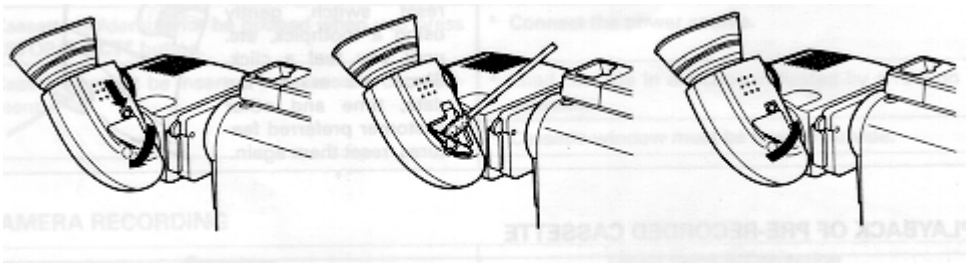
Symptom	**Check Point & Correction**
"PLAY" button cannot be engaged.	Set the "POWER" switch to "VIDEO" position.
No picture appears on television screen when Camera/recorder channel (3 or 4) depending upon the selected channel on (TV is connected to the camera/recorder using RF converter unit.)	Set the television to the "PLAY" is pressed. RF channel select switch by of RF converter unit. Set "AV IN/OUT" switch to

"OUT" position. Interference on playback picture.
Adjust the tracking using
"TRACKING" control
(power zoom switch).
When you see the playback
picture on your TV, adjust
fine tuning knob on television
set to obtain best picture.
The pre-recorded tape is EP
or LP recording. This
camera/recorder is for use in
SP recording only. Picture bends at the top of the TV screen. TV receiver is older type. It
needs to be modified to work
properly with
camera/recorder.
Tape is damaged. Try another
cassette.

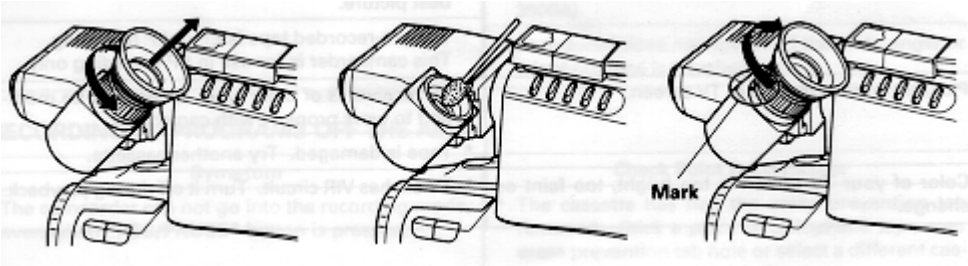
Color of your TV screen is too bright, too faint or TV set has VIR circuit. Turn
off during playback.change.

CLEANING THE INSIDE OF THE ELECTRONIC VIEWFINDER

For VM-1800A



For VM-2800A/3800A

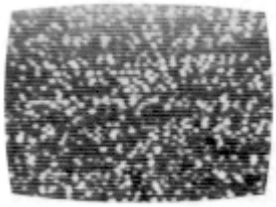


HEAD CLEANING

Picture playback may become blurred or be interrupted. This does not mean that the recorded program has been erased.

Dirt accumulated on the head after long periods of use causes this problem. In this case, head cleaning requiring highly technical care is necessary.

Consult your nearest dealer or VCR service center before using a head cleaning tape.



PERIODIC MAINTENANCE

The video camcorder is a precision electromechanical device which will require periodic maintenance after a period of normal use. We expect that no maintenance other than head cleaning will be required during the warranty period of most users, unless the video camcorder is heavily used or seldom used. Normal maintenance is the responsibility of the user, although defective parts are covered during the warranty period. Consult your VCR service center to determine recommendations for normal maintenance based upon your location, use patterns and machine age.

SPECIFICATIONS

General

Power requirements	9.6V DC
Power consumption	VM-1800A: 7W (nominal) VM-2800A: 8W (nominal) VM-3800A: 8W (nominal)
Dimensions:	4-3/8"(W) x 8-1/16" (H) x 12-1/4" (D) 111(W) x 205(H) x 311(D) mm
Weight	4.4 lbs (2.0 kg)
Operating temp.	32°F ~ 104°F (0°C ~ 40°C)
Storage temp.	-4°F ~140°F (-20°C ~ 60°C)

Video Recorder Section

Format	VHS
Record/playback system	Two video record/playback heads plus a flying erase head
Video signal	EIA standard NTSC color
Tape speed	33.35 mm/sec.
Video input	1.0 VP-p, 75 ohm
Video output	1.0 VP-p, 75 ohm
Audio input	-7.8 dBs (316 m Vrms), more than 47 kohm
Audio output	-7.8 dBs (316 m Vrms),less than 1 kohm
Fast forward/rewind time	Less than 6 minutes with T-120 cassette

Camera Section

Scanning	525 lines/ 60 fields/ 30 frames
Required minimum illumination	1 lux
Pickup device	1/4" CCD
Lens diameter	46 mm

HOTLINE

For U.S.A. only

HITACHI

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800 HITACHI
1-800-448-2244

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Hitachi has made every effort to assure you hours of trouble free operation from your unit. However, should you require service, a network of Hitachi Authorized Service Facilities has been established in all 50 states and Puerto Rico. Each facility will provide you with convenient and expedient assistance. Our service "Hotline" operator will direct you to the Hitachi Authorized Service Facility nearest you. Just present proof of

purchase and/or delivery receipts to the Hitachi Authorized Service Facility and service will be rendered in accordance with the terms of the limited warranty as stated on your warranty card or operating guide.

Should you have any questions regarding in-warranty service, operation or technical assistance, please contact:

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Norcross, GA 30093
Tel 404-279-5600

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ACCESSORY TO ADD MORE EXCITEMENT

You're ready to add more excitement to your home videos, and Hitachi's right there with you. With our new line of video accessories, you can go anywhere your imagination takes you.
Now that you know how much fun video recording can be, you'll want to add new dimensions to your home videos. With convertor lenses, adaptors, extra.

We are preparing two kinds of accessory.
1. Included accessory
See page 3.
2. Optional accessory
Chart of Accessories

* Consult your nearest service center to replace the lamp.

If you want to place an order for these items, you can:
1. Call the toll-free number "1-800-HITACHI".
2. Mail to HITACHI with attached form: see page 51.

HOW TO ORDER USA only
In Canada - Please use Canadian order form in french version of this manual - page 51.

BY PHONE
To place your order by phone, have your VISA, MASTER CARD, or AMERICAN EXPRESS card ready and call this toll-free number anytime 24 hrs/day, 7 day a week.
1-800-HITACHI

BY MAIL

ACCESSORY TO ADD MORE EXCITEMENT

To place your order by mail, detach and mail the completed order form with credit card information, money order, or check in U.S. currency (payable to HITACHI HOME ELECTRONICS (AMERICA) INC.) to the following address:

HITACHI HOME ELECTRONICS (AMERICA) INC.
PARTS DIVISION
401 WEST ARTESIA BLVD.
COMPTON, CA 90220

Order Form

LIMITED WARRANTY

Hitachi Home Electronics (America), Inc. and Hitachi Sales Corporation of Hawaii ("Hitachi",) warrants this component in duration as stated below:

**** VIDEO CASSETTE RECORDER***
**** CAMCORDER***
**** AC ADAPTER CHARGER***

* **90 DAYS LABOR (Carry-in)**
*** 1 YEAR PARTS (Except Battery)**

Conditions of Hitachi Limited Warranty

Hitachi Video Products are warranted to be free of defects in parts and workmanship at the time of purchase by the original owner. If this product is found to be defective, Hitachi will repair or replace defective parts at no charge to the original owner. Parts used for replacement are warranted for the remainder of the original Limited Warranty period. For 90 days from the date of original purchase, Hitachi will provide labor for the repair or replacement of defective parts without charge, subject to the following conditions:

1. Owner must provide verification of the date of purchase when requesting Limited Warranty Service. (Dated Sales Receipt Required)
2. All repairs must be performed by a Hitachi Authorized Service Facility.

For information concerning repairs, operation, technical assistance or for referral to the location of your nearest Authorized Service Facility or Parts Distributor, call 1-800-HITACHI (1-800-448-2244)

HITACHI HOME ELECTRONICS (AMERICA), INC.
3890 Steve Reynolds Blvd.
Norcross, GA 30093
Tel: 404-279-5600

HITACHI SALES CORPORATION OF HAWAII
3219 Koapaka St.

Honolulu, HI 96819
Tel: 808-836-3621

HITACHI WARRANTY CARD (USA Back)

Warranty Limitations

The Limited Warranty provided by Hitachi does not cover:

A. Cabinet (exterior finish items), Battery Packs, Accessories, Head Cleanings, Video Tape Damage, or TV Set Modifications.

B. Any defect, malfunction, or failure caused by or resulting from improper service, maintenance, repair, use of Video Cleaning Cassettes, or from abuse, neglect, accident, or any other cause beyond the control of Hitachi.

C. Unpacking, set-up or installation, adjustment of customer operated controls, user instruction.

D. Any product with Serial Numbers altered or removed.

E. New products purchased or service performed outside of the continental United States or its possessions.

F. Product used for a commercial or industrial purpose.

NO PERSON, AGENT, DISTRIBUTOR, DEALER, SERVICE FACILITY, OR COMPANY IS AUTHORIZED TO CHANGE, MODIFY, OR AMEND THE TERMS OF THIS LIMITED WARRANTY IN ANY MANNER OR FASHION WHATSOEVER, EXCEPT AND TO THE EXTENT PROVIDED IN THIS LIMITED WARRANTY, HITACHI MAKES NO EXPRESS WARRANTY REGARDING THIS HITACHI PRODUCT. FURTHER, ALL IMPLIED WARRANTIES RELATING TO ANY PORTION OF THIS PRODUCT, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO 90 DAYS FOR LABOR AND TWO YEARS FOR PARTS, THE DURATION OF THE APPLICABLE EXPRESS WARRANTY CONTAINED ABOVE HITACHI SHALL NOT BE LIABLE TO THE PURCHASER OR TO ANY OTHER PERSON FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSS OF PROFIT OR PRODUCT RESULTING FROM ANY DEFECT IN OR MALFUNCTION OR FAILURE OF THIS HITACHI PRODUCT. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE EXCLUSION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

Important Notice:

Retain your sales receipt for warranty purposes. Please complete the section below for your records as it may be needed in the event of loss.

Attach sales receipt to this card.

VIDEO PRODUCTS LIMITED WARRANTY REGISTRATION

(for your record)

HITACHI WARRANTY CARD (Front)
CANADA ONLY

Model No.
Serial No.
Date of Purchase
Dealer Name
Dealer Address
City State Zip

HITACHI

**HITACHI WARRANTY CARD (Front)
CANADA ONLY**

NOT VALID IN U. S. A.
HITACHI
VIDEO PRODUCTS GOLD CARD WARRANTY
*** See inside for the GOLD CARD advantages and how to get it.**

HITACHI

EXCEPTIONAL PERFORMANCE

HITACHI (HSC) CANADA INC.

3300 Trans Canada Highway, Pointe Claire, Quebec H9R 1B1

IMPORTANT NOTICE: This warranty will not apply to products purchased outside of Canada OR sold by any organization other than HITACHI (HSC) CANADA INC.

PROTECTION PLAN CONDITIONS

A - This contract is exclusively for products manufactured and sold by Hitachi (HSC) Canada Inc., hereinafter called "Hitachi", purchased in Canada from a dealer duly accredited by Hitachi. The program is available only for products covered by an original validated Hitachi warranty given at the time of the purchase.
B - Hitachi will make repairs to the product mentioned in this plan, parts and labour charges included, until the expiry date of this plan.
C - THIS PROTECTION PLAN WILL BE IN FORCE ONLY AFTER EXPIRATION OF THE NORMAL PURCHASER'S WARRANTY. During the normal warranty the only valid proof required for servicing the product is the Hitachi GOLD CARD or the bill of purchase. The Protection Plan Card cannot be used as proof of warranty.
Only after the expiration of the normal warranty, the owner can have the product repaired, without charge at any authorized Hitachi Service Center upon presentation of the Protection Plan Card.
D - This Protection Plan is applicable to the product mentioned excluding the

accessories such as cables, batteries, etc.

E - THIS PROTECTION PLAN DOES NOT COVER:

(1) Damage caused by incorrect use or negligence, unauthorized alteration, improper storage or repairs done by an unauthorized service depot;

(2) Damage caused by fire, flood, lightning, acts of God or other events beyond the control of Hitachi;

(3) External parts such as the cabinet, knobs, remote control case, antenna, cords, etc....;

(4) Any repairs if the product is used for rental or other commercial use.

(5) Any repairs done outside Canada;

(6) Repairs due to damage in transit, improper handling by carrier or improper packing by the owner (specifically applicable in the case of the product having to be shipped by the owner);

(7) In Home service. All video products must be brought to the Service Center for repairs;

(8) Original installation and any subsequent reinstallation or any transformation of the product;

(9) The replacement of the video camera pick-up element, if the pick-up element has been over exposed to an intense source of light;

(10) Cleaning the video heads.

F - All repair costs must be claimed from Hitachi, at all times, through an authorized Hitachi Service Center. The Plan Owner should never directly pay the authorized Service center unless given special authorization from Hitachi. No repair costs will be reimbursed directly to the Plan Owner.

G - The Plan Owner will receive a PLATINUM CARD which is the only valid document to be presented at the time of repair to an authorized Hitachi Service Center. THIS PROTECTION PLAN IS NOT TRANSFERABLE NOR REFUNDABLE.

H - This Protection Plan can be renewed as long as the request is made before the expiry date of the Plan. Hitachi, however, reserves the right to refuse any renewal.

I - Hitachi reserves the right to cancel the Protection Plan in case of abuse by the owner, in such case, Hitachi will reimburse the owner the portion of the plan cost, based on the period used.

J - This plan does not constitute an insurance policy. It is the owner's responsibility to insure for loss of the product and for any damages which might occur and for loss or damages to any other object and for personal or property liability caused directly or indirectly by the product.

HITACHI CANADA WARRANTY CARD (Back)

Hitachi VIDEO PRODUCTS are guaranteed to be free from defects in workmanship and material. If any failure resulting from either workmanship or material defect should occur under normal and proper usage within the period stated hereunder from the original provable date of purchase, such failure should be repaired at no cost to the buyer, provided the defective product is brought to a HITACHI AUTHORIZED SERVICE CENTER in Canada.

NOTE: The GOLD CARD becomes the proof of your warranty. it assures you of a personalized quality service and it is accepted by our authorized service centres everywhere in Canada.

However, to receive your exclusive Hitachi GOLD CARD, you must include a copy of your bill of sale with the return portion of this warranty registration card.

"GOLD" WARRANTY PERIOD

Video Tape Recorder, Tuner, Timer, 1 year parts and labour.

Camera, camcorder, AC Adaptor, Charger, 1 year parts and labour.

All goods returned to either Hitachi or a Hitachi Authorized Service Center must be shipped on a "PREPAID BASIS". To avoid any damage to the returned goods, please ensure that proper packaging procedures are followed. A short written description of the problem along with proof of warranty should accompany the product returned for repair. Only products under warranty will be returned on a no-charge basis to the customer. The customer is responsible for all transport costs if the product is no longer under warranty.

WARRANTY DOES NOT COVER

1. Products received for repair without sales or delivery receipt showing date of purchase by the original customer.
2. Damages caused by incorrect use, carelessness, unauthorized alterations, improper storage or unauthorized service or repairs.
3. Damage caused by fire, flood, lightning, acts of God, or other events beyond the control of Hitachi.
4. Batteries, tape cassettes, earphones, antennas, accessories and external parts such as cabinet and knobs.
5. PRODUCTS PURCHASED OUTSIDE CANADA.
6. Products used outside Canada
7. In transit damage claims, improper handling by carrier or post offices.
8. Products or parts thereof which have had serial numbers removed, altered or defaced.
9. Products used for commercial purposes.
10. ***PRODUCTS USED FOR RENTAL***
11. In home service at the customer's location.

HITACHI CANADA WARRANTY CARD (Back)

12. Original installation (set-up) and all normal maintenance needed such as CLEANING OF VIDEO HEADS.
13. The replacement of the video camera pickup element if the pickup element has been OVER EXPOSED to an intense source of light.
14. Products sold in Canada by any organization other than HITACHI (HSC) CANADA INC.

IMPORTANT: *This warranty is in lieu of all other warranties, guarantees, or agreements whether express or implied, and no person, dealer or company is authorized to change, modify, or extend its terms in any manner whatsoever.*

HITACHI WARRANTY REGISTRATION (for your records)

Model No.
Serial No.
Date of Purchase
Dealer's Name
Dealer's Address
City
Province

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[1]Introduced in 1995-96. Mention as current model. Only mention year of production if caller is very persistant!!

Warranty 90 day labor, 1 year parts except battery.
[2]The battery that comes with these camcorders is a lead-acid battery. Lead-acid batteries should be stored with a full charge. If the camera is not used often, it's recommended to fully discharge the battery then recharge before storing again. This keeps the cells of the battery active, prolonging the life of the battery. The average life of camcorder batteries is 2 years. (some last one year and some last three years, dsimpy epends on frequency of use.
[3]This camcorder uses TTL (through the lens) focusing technology. This is a contrast focusing system that is light dependent. This system allows the user to use auto focus while using accessory lenses. Infrared focusing systems used by other manufacturers require manual focusing when connecting accessory lenses.
[4]**1. Lens**
F1.6 is the F-Stop of the camera. The lower the number, the better. Lower F-Stops allow more light to enter through the lens creating more vibrant, colorful pictures. The lens apertur, 4mm - 48mm, means the optical zoom is twelve to one (48 divided by 4). Using the instant zoom this camera has 36 to 1 digital zoom capability.

[5]If the AV In/Out switch is in the "IN" position the viewfinder will appear to be nonfunctional. This is normal operation.
[6]You must hold down the W switch until your are **not** zoomed in on the object at all in order for the macro focus to work.
[7]This feature cannot be deactivated. The caller will complain they cannot get "Index" removed from the viewfinder. All they need to do is to start recording. After recording for a few seconds of recording "Index" will disappear. "Index" will not, cannot, be recorded on the tape inside the camcorder.
[8]Also can be used with new

[9]Audio and Video Dubbing on these 3 camcorders is done simultaneously!
The camera cannot perform an audio dub independenly of a video dub and vice versa.